

PSYCHOLOGY

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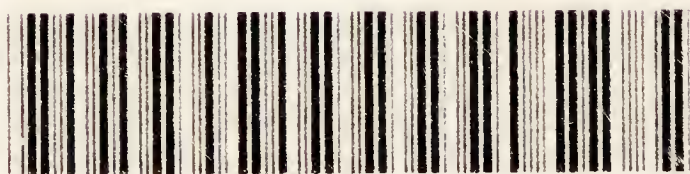
NURSES



BESS V.
CUNNINGHAM

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PSYCHOLOGY
for
NURSES

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PSYCHOLOGY
for
NURSES

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*DESIGNED AND WRITTEN
FOR STUDENT NURSES*

By

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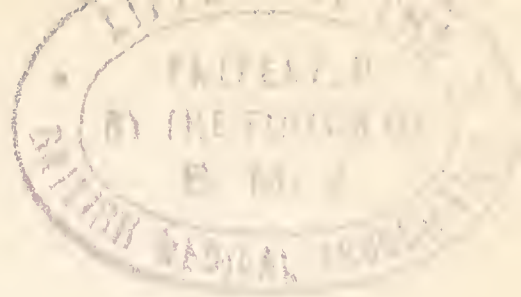
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To
ELLA GORBY TAPPAN

studies which support statements. Without reporting research in detail, incidental references serve to suggest that conclusions are based, as far as possible, upon facts. They also make it possible for those who may be so inclined to read many studies in their original form. In the selection of themes for emphasis and in discussion of material which must be interpreted, personal leanings are, of course, evident.

I am deeply grateful, first of all, to the student nurses who have stimulated me to write this text and next, to graduate nurses who have given me the benefit of their more mature viewpoint. To the hundreds of college students from other fields who have helped me to get an improved perspective on the motives, problems and eager outlook of young persons of college age, I also owe a debt of gratitude.

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BESS V. CUNNINGHAM



CONTENTS

CHAPTER	PAGE
I. WHAT IS PSYCHOLOGY?	I
Some Common Human Traits Recognized by Ancient Man .	I
Science Rooted in Human Curiosity	3
Experimental Psychology A Product of Biological Sciences .	4
The Need for Scientific Methods and Attitudes	5
The Methods of Science	8
Arguments Replaced by Experimentation	8
Testing Hypotheses	9
Summary of the Methods of Science	9
Summary	10
Suggested Activities	11
Suggested Reading	12
References Cited in this Chapter	13
II. PSYCHOLOGY AND THE STUDENT NURSE	14
What Brings Her?	14
Early Interest in Nursing	16
What Does She Bring with Her?	17
Child-in-the-Home-Habits	17
Social Habits and Attitudes	18
Emotional Habits and Attitudes	19
Study Habits and Attitudes	19
Subject Matter Preferences and Prejudices	19
Variations in Academic Background	21
Misfit Study Habits	21
Learning Problems Which Confront Her	21
Memorization	21
Motor Skills	23
Organizing Knowledge for Use	23
What Lies Ahead?	23
Summary	25
Suggested Activities	25
Suggested Reading	25

CHAPTER	PAGE
III. PSYCHOLOGY, THE NURSE AND HER PATIENTS	28
Differences Due to Age	29
Psychological Care of Children	30
Helping Children to Feel Secure	30
Telling Children What to Expect	31
Enlisting Cooperation	31
Psychological Care of the Aged	32
Health and Happiness in Old Age	32
Elderly Patients Sometimes Feel Useless	33
Changes in Perception with Age	34
Memory in Old Age	34
Contributions of the Aged	34
Differences Due to the Nature of the Disorder	35
The Partially Deaf	36
The Neurotic	36
Other Patients Needing Special Care	37
Psychological Care of All Patients	37
Need to Change Habits	37
Relief from Monotony	37
Need for Security	38
Summary	38
The Task of the Nurse—A Forward Look	38
Suggested Activities	39
Suggested Reading	40
References Cited in this Chapter	41
IV. WHY WE DIFFER	42
How We Differ	42
The Nature of Heredity	45
How Life Begins	45
Germ Cells and Body Cells	46
What Traits are Hereditary?	48
Recessive Traits	48
The Inheritance of Mental Defects	49
Feeble-mindedness	50
Levels of Feeble-mindedness	50
Is All Feeble-mindedness Inherited?	51
Circumstantial Evidence of the Inheritance of Feeble-mindedness	51
The Nature of Environment	52
Geographical or Physical Environments	52
Social and Cultural Environments	52

CHAPTER	PAGE
IV. WHY WE DIFFER (cont.)	
The Nature of Environment (cont.)	
Environments of Custom, Belief and Tradition	53
Inter-Personal Environments	53
Prenatal Environment	53
Cretinism	54
Mongolism	54
A Word of Caution	54
Interaction of Heredity and Environment	55
Heredity, Environment and Mental Growth	56
The Student Nurse Needs a Viewpoint	56
Family Resemblance in Intelligence	58
Studies of Identical Twins Reared Apart	58
Studies of Children in Foster Homes	59
Studies of Children in Institutions	60
Some Practical Questions Concerning Intelligence	60
Heredity, Environment and Personality	61
Summary	62
Suggested Activities	64
Suggested Readings	65
References Cited in this Chapter	66
V. THE HUMAN ORGANISM	67
Varieties of Response	67
Underlying Principles Noted	69
No Behavior Is Haphazard	69
Behavior Is not Fragmentary	69
We React to Total Situations	70
Response Mechanisms	70
Smooth Muscles	70
The Duct Glands	71
The Ductless (Endocrine) Glands	71
Pituitary Gland	72
The Thyroid Gland—Hypersecretion	72
Hypothyroidism	74
Parathyroid Glands	74
Adrenal Glands	74
Liver and Pancreas	75
Pineal Body and the Thymus	75
Characteristics of Response Mechanisms	76
Receiving Mechanisms	76
Exteroceptors	76

CHAPTER	PAGE
V. THE HUMAN ORGANISM (cont.)	
Receiving Mechanisms (cont.)	
Exteroceptors (cont.)	
Skin Receptors	76
Gustatory Receptors	77
Olfactory Receptors	78
Auditory Receptors	78
Visual Receptors	80
Proprioceptors	82
Kinesthetic Receptors	82
Receptors for Equilibrium	82
Interoceptors	83
The Central Nervous System	83
The Brain	84
The Cerebral Hemispheres	84
The Brain Stem	86
Cerebellum	86
The Spinal Cord	86
Autonomic Nervous System	86
Divisions of the Autonomic System	87
An Emergency Mechanism	89
Bodily Changes Related to Sympathetic Activity	89
Cortical Activity, The Hypothalamus and the Autonomic System	89
Reactions of the Nervous System as a Whole	90
A Reflex Reaction	90
Increased Bodily Activity	91
Controlled Motor Responses	91
Intellectual Responses	91
Emotional Reactions	91
Psychological Implications	91
Some Research in Progress	92
Localization	92
Cerebral Dominance	93
“Brain Waves”	94
Summary	96
Suggested Activities	97
Suggested Reading	98
References Cited in this Chapter	99
VI. MAINSPRINGS OF ACTION	100
Organic Tensions as Drives	101
Studies of Physiological Drives	101

CHAPTER	PAGE
VI. MAINSPRINGS OF ACTION (cont.)	
Organic Tensions as Drives (cont.)	
Studies of Physiological Drives (cont.)	
Strength of Drive Related to Amount of Activity	102
Activity Due to Tension	102
Development of Motives	104
Development of Motives in Babyhood	104
Joy in Being a Cause	105
Motives of Personal Worth	105
Social Motives	106
Interaction of Personal Worth and Social Motives	107
Personal Worth and Social Motives in Conflict	108
Common Human Needs	109
The Nature of a Need	110
Classification of Needs	110
Physiological Needs	111
Need to be Safe and Secure	111
Need for Approval, Love and Affection	112
Need to Belong	112
Need for a Sense of Personal Integrity and Self-Actuali- zation	113
Motives Compared as to Strength	114
A Study of Adult Values	114
Desires as Suggested by Expenditures	115
Summary	118
Suggested Activities	119
Suggested Reading	121
References Cited in this Chapter	121
VII. LEARNING HOW TO STUDY	122
Learning Is Self-Active	123
Establish a Set Time for Studying	123
Speed Up Rate of Reading	126
Learn to Take Notes	127
Intelligent Learning Is Goal-Directed	128
Can One Learn to Concentrate?	128
Knowledge of Results is Helpful	129
Look for Means-End Relationships	130
Intelligent Learning Involves a Search for Meanings	131
Avoid Study of Fragments	131
Study Meaningful Wholes	132
Organize Notes	133
Look for Principles	133

CHAPTER	PAGE
VII. LEARNING HOW TO STUDY (cont.)	
Learning Motor Skills	134
Learning Is Self-Active	134
Use of a Model	134
Does Practice Make Perfect?	135
Intentional Practice of an Error	135
Learning Is Goal-Directed	135
Consider Total Learning Situation	136
Characteristics of Motor Learning Curves	137
Initial Learning Is Often Rapid	137
Plateaus Are Common	137
Subjects Necessitating Memorization	138
Learning Is Self-Active	138
Reading, Re-reading and Testing	138
Recitation and Recall	139
Overlearning Is Necessary	139
How Shall We Distribute Study Time?	140
Learning Is Goal-Directed	140
What We Do After Learning Is Significant	140
Learning Is Meaningful	141
Shall We Memorize Wholes or Parts?	141
Studies in Which Meanings Are Stressed	142
Development of Understandings and Appreciation	142
Know Purpose of Course	142
Look for Inter-Relationships	143
Test Personal Growth	143
Summary	143
Suggested Activities	146
Suggested Reading	147
References Cited in this Chapter	148
VIII. LEARNING TO THINK AND TO REASON	149
Childish Thinking Illustrates Importance of Experience	149
Meanings in Terms of Experience	149
Recognition of Likeness and Difference	151
Confusion of Real and Fancied Experiences	154
Problem Solution in Terms of Experience	156
Solving Abstract Problems	156
Insight	156
Generalizing	157
Characteristics of Thought	158

CHAPTER	PAGE
VIII. LEARNING TO THINK AND TO REASON (cont.)	
Characteristics of Thought (cont.)	
Perception	158
Insight	158
Errors in Perception	160
Attention	160
Disorders of Attention	162
Memory	162
Errors in Memory	162
Reasoning	163
Substitutes for Thinking	163
Errors in Reasoning	164
Can We Learn to Think?	164
Conclusions Drawn from Illustrations of Children's Think- ing	165
Conclusions Based Upon Characteristics of Thought	166
Summary	168
Suggestions for Discussion	169
Suggested Reading	171
References Cited in this Chapter	172
IX. SOCIAL AND INDIRECT LEARNINGS	173
What Is Meant by Social Learnings?	173
Habits, Standards and Attitudes	174
Attitudes Change	174
Ready-Made Attitudes	176
Attitudes Learned in the Family	177
Parent-Child Relationships	177
Enter The Issue—Adult Made	177
Issues Between Adolescents and Their Mothers	180
By-Products of Parent—Child Relations	181
Habits, Standards and Attitudes Learned from Peers	181
Social Experimentation	182
Enter The Issue—Child Made	182
Discipline of the Group	183
By-Products of Social Experimentation	185
Aggression—Submission	185
Leadership—Followship	185
Broad-Mindedness—Prejudice	186
Group Loyalties	186
Prejudice	186
Group Standards	187

CHAPTER	PAGE
IX. SOCIAL AND INDIRECT LEARNINGS (cont.)	
Habits, Standards and Attitudes Learned from Peers (cont.)	
Group Loyalties (cont.)	
Levels of Aspiration	188
Social Pressures Reinforcing or Changing Attitudes	189
One-sided Presentation,—Propaganda	189
Leisure Reading, Motion Pictures and Radio	190
Church, School and Youth Organizations	191
Democratic Living and Social Attitudes	192
Personal Factors Influencing Social Attitudes	193
Summary	193
Suggested Activities	196
Suggested Reading	197
References Cited in this Chapter	198
X. EMOTIONAL LEARNINGS	199
Organic Basis of Emotion	199
Laboratory Studies of Organic Change	199
Emotional Reactions of a Cat	200
Implicit and Overt Emotional Responses	200
Emotional Response to Motion Pictures	201
Emotional Learning Through Conditioning	202
Laboratory Studies of Conditioning	202
Spread to Related Situations	203
What is Basic in Emotional Conditioning?	204
Can Conditioned Emotional Reactions Be Unlearned?	205
Verbal Appeal	206
Method of Disuse	206
Social Imitation	206
Direct Conditioning	207
Common Emotional Expressions	207
Fears, Worries, and Anxieties	207
Unreadiness in Relation to Fear	208
Reported Fears	208
Guidance of Fears, Worries, and Anxieties	208
Helping Children	209
Helping Adult Patients	210
Anger and Irritability	211
Frustration and Anger	211
Temper Tantrums	211
Guidance of Anger and Irritability	212
Guidance of Anger in Childhood	212

CONTENTS

xvii

CHAPTER	PAGE
X. EMOTIONAL LEARNINGS (cont.)	
Common Emotional Expressions (cont.)	
Guidance of Anger and Irritability (cont.)	
Guidance of Angry or Irritable Adults	213
Jealous Behavior and Guidance	213
General Emotionality	213
Differences Between Children and Adults	214
Individual Differences in Emotionality	214
Summary	215
Suggested Activities	218
Suggested Reading	219
References Cited in this Chapter	219
Answers to Test of Beliefs, Following Chapter I	220
XI. REACTIONS TO STRAIN AND FRUSTRATION	221
The Nature of Stress and Strain	221
Nature of Frustration	222
Evidences of Tension	222
Causes of Stress and Strain	223
Environmental Obstacles	223
Economic Adjustments	223
Restrictions and Taboos	224
Group Prejudices	224
Physical Handicaps	224
Conflict of Motives	224
Adjustment Mechanisms in Everyday Life	225
Defensive Reactions	226
Compensation	226
Egocentrism	226
Projection	226
Capitalization	227
Withdrawing Behavior	227
Seclusiveness and Timidity	227
Regression	228
Identification	228
Adjusting by Means of Self-Deception	229
Rationalization	229
Daydreaming	230
Logic Tight Compartments	231
Repression	232
Psychoneuroses	232
Ailment Adjustments	233
Hysteria	233

CHAPTER	PAGE
XI. REACTIONS TO STRAIN AND FRUSTRATION (cont.)	
Psychoneuroses (cont.)	
Ailment Adjustments (cont.)	
Neurasthenia	235
Hypochondria	235
Anxieties	236
Psychasthenia	236
Psychosomatic Relationships	236
Serious Maladjustments	238
Learning to be Insane	238
Predisposing and Exciting Causes of Insanity	240
Some Forms of Insanity	240
Schizophrenia	241
Manic Depressive Psychoses	241
Summary	241
Suggested Activities	245
Suggested Reading	245
References Cited in this Chapter	246
XII. WHAT IS PERSONALITY?	247
Personality as Interaction	249
Personality as Social Stimulus	250
Personality as Attitudes	251
Family Experiences Influencing Personality	251
Experiences During the First Year of Life	252
Position in the Family	255
Discipline	258
Early Experiences in an Institution	258
A Study of Identical Twins Reared Apart	259
A Search for Personality Types	260
Personality and Body Build	261
Introvertive and Extrovertive Tendencies	262
Changing Personalities	264
Summary	265
Suggested Activities	267
Suggested Reading	268
References Cited in this Chapter	269
XIII. MEASURING ASPECTS OF PERSONALITY	270
Tests of Intelligence	270
Intelligent Behavior	270
Nature of an Intelligence Test	271

CHAPTER	PAGE
XIII. MEASURING ASPECTS OF PERSONALITY (cont.)	
Tests of Intelligence (cont.)	
Individual Tests	273
Army Group Tests	274
Later Group Tests	276
Mental Age and IQ	279
How Stable Is an Intelligence Quotient?	280
Changes in Relation to Age	280
Uses of Intelligence Tests	281
Testing Special Aptitudes and Interests	282
Mechanical Aptitude	282
Vocational Interests	284
Testing Self-Adjustment	285
Testing Temperament	286
Testing Significant Traits	287
Testing Social Adjustment	288
Social Behavior	289
Social Intelligence	289
Social Attitudes	290
Testing Emotional Adjustment	293
Tests for Student Nurses	294
Scholastic Aptitude	295
Subject Matter Tests	295
Tests of Adjustment	296
Summary	297
Suggested Activities	300
Suggested Reading	301
References Cited in this Chapter	302
XIV. THE NURSE ON THE HOME FRONT	304
Establishing Wholesome Personal Relationships	305
Fostering the Aims of Democracy	307
Social Worlds	307
Living Democracy	308
Problems of Delinquency	310
Environmental Factors Contributing to Delinquency	311
Personal Factors Contributing to Delinquency	312
Exaggeration of Problem in Wartime	314
Some Problems Related to the War	315
Common Adjustment Problems	315
War Neuroses	315

CHAPTER	PAGE
XIV. THE NURSE ON THE HOME FRONT (cont.)	
Some Problems Related to the War (cont.)	
Combat Fatigue	316
Suggestions for Helping the Returned Service Man . .	317
Education for Marriage and Family Living	318
Mental Hygiene Programs	318
Summary and Conclusions	319
Suggested Activities	320
A Selected List of Recent Publications of a Psychological	
Nature Suggested for Future Reading	320
References Cited in this Chapter	322
 AUTHOR INDEX	 323
 SUBJECT INDEX	 327



PSYCHOLOGY FOR NURSES

Chapter I

WHAT IS PSYCHOLOGY?

Psychology is the science of human behavior. It is about man and his ways of adjusting to the world around him, about his behavior and why he behaves as he does. As a science, psychology is relatively new, but, because its subject matter is man, the roots of psychology are, in some respects, as old as man himself.

The beginnings of interest in human behavior and of attempts to explain it are veiled in antiquity. To trace the development of the science of psychology from such crude beginning we should have to go back beyond recorded history to the first expressions of man's wonderment about his fellow man: to a mother, perhaps, wondering why her second child was so unlike the first; to a warrior, pondering ways of outwitting his rival; or to an ambitious youth, puzzled to discover why his fellows seemed bent upon putting obstacles in his way.

SOME COMMON HUMAN TRAITS RECOGNIZED BY ANCIENT MAN

In folk literature, which dates back thousands of years, we can find suggestions of ancient man's insight into the strengths, the vanities and foibles of his fellows. Myths, legends and other tales of ancient folk portray for us the same traits which we recognize in the behavior of our associates today. In ancient times, as now, it was necessary upon occasion for man to be submissive. In myths we read of submission to man-like gods who appear to have been human in all respects except in their possession of supernatural power. In the same myths we see, also, unwillingness to be merely submissive, as innumerable attempts to exercise control over others are portrayed.

The human tendency to bolster self-esteem through achievement is suggested in many ancient tales, of which the myth about Phaeton is typical. Phaeton, the son of Apollo, the sun god, seems to have craved great adventure and proof of his own importance as many do today. After securing from his father a promise to grant him whatever he might ask, Phaeton demanded that

he be allowed to drive the chariot of the sun, an adventure providing unlimited opportunities for self-glorification. He was able to enjoy his adventure only briefly, however, and with dire results to many; he drove his chariot near the earth, the earth became scorched and dry, and finally, unable to control his powerful horses, Phaeton fell to the earth in a disastrous and final blaze of glory.

The story illustrates more than a recognition by ancient man of a common human desire to be of great importance; it also suggests that the characteristically human behavior of gods and goddesses was responsible for natural phenomena. All mysteries were explained in terms of human reactions which brought either fortune or misfortune to man.

In old folk tales, handed down to the present generation by word of mouth during many centuries, we find indications of universal human experiences and of human traits with which we are all familiar. Most student nurses are acquainted with the tale of *Cinderella*, but they probably do not recognize the fact that Cinderella is an expression of a human desire as old as man himself. The story has been told in many forms and in many lands. It suggests that the world over and as far back in time as folk literature goes our forebears seem to have been impressed by the fact that the meek, insignificant, ill-treated person has the same aspirations as his more fortunate associates. The student of psychology in literature finds the same theme in innumerable stories of the *Three Brothers*, stories in which the youngest and least important brother always achieves the greatest success.

In fables, which probably date as far back as the fifth century B. C., we can find entertaining and apt characterizations of some of the quirks of human nature which we commonly note today. The *Dog in the Manger*, who could not use all that he had but was determined that no one else should share his possessions is one example. The fox who, looking at the grapes above his head and out of reach, said that he did not want the grapes anyway because they were too sour, behaved as men and women often behave in the 20th Century. We could go on indefinitely, adding to the list of fables in which common human traits are exemplified: the milkmaid who counted her chickens before they were hatched; the steady, plodding tortoise who, through his steadfastness, won a race over his opponent, the care-free hare who stopped to play; the miller and his son who brought disaster upon themselves because they heeded the advice of all who proffered it.

In all such fables we trace a recognition of very common human tendencies. In some we can detect, also, insight into ways of managing other persons, as illustrated in the fable of the *Fox and the Crow*. The crow, it may be recalled, held in her beak some food which the fox desired but could not get

through direct attack. Recognizing the crow's love of flattery, the fox begged her to sing for him. The success of the fox's ruse can easily be surmised.

SCIENCE ROOTED IN HUMAN CURIOSITY

Down through the centuries, long after belief in mythological gods and goddesses had been abandoned, man appears to have been persistently curious about the behavior of his fellows. Lacking a knowledge of how to test his beliefs, we find him attributing human reactions to the influence of stars, to various forms of magic, to spirits and to witchcraft. Through centuries of a prevailing belief in such supernatural influences we can trace a continuing curiosity about why man behaves as he does and why certain persons seem prone to deviate from the expectations of their groups. The development of a science of human behavior is probably due in large measure to this persistent belief that there must be some valid explanation of man's reactions to his fellow man and to other forces in his environment. It is this conviction which has inspired scientists to work patiently and painstakingly in order to contribute to science some small but significant facts about human behavior.

Before the fourth century B. C. there were, according to historical records, some few men who were dissatisfied with commonly accepted explanations of human behavior in terms of the supernatural. Hippocrates, the founder of medicine, who lived in the fourth century B. C., was among these exceptional men. He lived in a period when practically nothing was known about ways of testing beliefs. One man's ideas were as good as another's. Because he did not know how to put his theories to the test, Hippocrates offered some explanations which, in the light of later developments, appear to be extremely naive.¹

He believed that the brain was the source of equanimity and of behavior that was wise and enlightened and good. The chest, according to his theories, was the source of pleasure and pain; it governed impetuous and passionate behavior. All bestial instincts and crude and ignorant behavior, supposedly, had their source in the abdomen. He thought that breath was the source of intelligence and feeling.

He formulated a theory about personality differences. He believed that it was possible to classify individuals according to the type of *humors*, (fluids), which predominated in the body. If a person were melancholy, his temperament was attributed to the predominance in his system of black bile; if he were hot-tempered it was because he had an unusually large supply of yellow bile. A cheerful, hopeful person was believed to have a predominance of blood, while a phlegmatic person owed his temperament to an excess amount of phlegm. He was interested in discovering a relationship between human

behavior and the nature of the human mechanism. He was aware of the complexity and variety of reactions made by his fellow man. He attempted to explain individual differences in personality. He foreshadowed modern psychology in his efforts to interpret behavior in terms of the human organism.

The theories of Hippocrates could not, of course, be experimentally tested, because technics for evaluating such hypotheses were unknown and possibly unsuspected in his day. His contributions to the science of psychology are, nevertheless, very important, however untenable his ideas may appear in the light of later knowledge of scientific methods of inquiry.

The development of the science of psychology, however, has been exceedingly slow. Seven centuries after Hippocrates, a belief in sooth-saying and in the supernatural appears to have been common, as suggested by the admonitions of Galen, a Greek physician and a leading scientist in his period: * “Do not go to the gods to make inquiries and thus attempt by sooth-saying to discover the nature of the directing soul . . . or the principle of action of nerves but go and take instruction on this subject from an anatomist.”

EXPERIMENTAL PSYCHOLOGY A PRODUCT OF BIOLOGICAL SCIENCES

The progress of modern experimental psychology is closely allied with the development of biological sciences. Some students approach their first course in psychology, expecting to devote a number of weeks to a discussion of *mind*. Those who do, will need to readjust their thinking so as to be ready to study all of man's behavior. Psychology is not a study of man's *mind*; it is a study of man. It is about man as a whole and hence is dependent upon the biological sciences.

During the middle years of the 19th Century, physiologists were occupied with laboratory experiments in which they studied such problems as: motor responses to stimuli of different kinds; the action of the eye, ear and brain; and the mechanism of nerve responses. They were also interested in an analysis of fragmentary responses in relation to the intensity of stimuli and in such physiological activities as those involved in the adaptation of visual mechanisms to light waves. In the course of experiments in physiological laboratories, however, it very soon became apparent that a knowledge of mechanisms without an appreciation of how those mechanisms were used by man was of relatively little value. In tracing the action of the visual mechanism in response to light, for example, it soon became evident that a study of vision necessitated

* Zilboorg, G. and Henry, G. W. *A History of Medical Psychology*, New York: W. W. Norton and Co., Inc., 1941, p. 87. Quoted by permission of publisher.

a study of how vision functions in the life of man. Needs such as this gave physiologists and psychologists a common interest.

In the course of various physiological experiments, scientists noted that subjects differed greatly in the way in which they responded to certain stimuli. When physiologists became interested in individual variations, physiologists and psychologists were again brought closer together in their interests. Since these early experimental studies of isolated physiological reactions, psychology has been closely allied with the biological sciences.

One of the most significant experiments in all psychological literature is that made by a Russian physicist, Pavlov, who studied the gastric secretions of a dog under what might be termed psychological influences. This experiment we shall discuss in a later chapter, as we study emotional reactions. The psychology of emotions cannot be separated from the physiology of emotions, as we shall see later.

Neurologists who study the action of the nervous system under different conditions contribute directly to the science of psychology. Were it not for many carefully controlled studies of the influence of brain lesions upon the behavior of the human organism as a whole, the little knowledge that we now have about the localization of brain function would be impossible. Neurological research is as significant for the psychologist as it is for the neurologist.

Theories concerning the inheritance of certain characteristics are based upon carefully controlled studies of biologists specializing in studies of heredity.

As a scientific study of behavior, psychology obviously cannot stand alone; it needs the support of related sciences.

THE NEED FOR SCIENTIFIC METHODS AND ATTITUDES

As psychology has gradually become a science, many popular guesses and speculations about human behavior have had to be discarded. There is no place in any science for superstitions and for old wives' tales which, along with a consuming interest in human behavior and a great curiosity about why man behaves as he does, have come down to us from past generations. If the student nurse were to take an inventory of some of the beliefs which she has accepted without questioning, she would no doubt be surprised to discover that she adheres to some beliefs in support of which she can find no sound arguments. The following list is suggestive of many such popular beliefs:

If you stare at a person's back you can make him turn around; this is a form of telepathy.

Persons who have square jaws are stubborn.

Persons who are born under certain planets show the influence of those planets in their characters.

A "strawberry" birthmark on a child is due to the mother's craving for strawberries before the birth of the child.

When first cousins marry their children will be abnormal in some way.

Physical weakness is a characteristic of persons who are mentally superior.

If a mother is frightened by a certain animal prior to the birth of her child the child will be afraid of that animal.

One of the first things which a student nurse has to learn, before she can appreciate the curriculum of sciences provided for her, is that uncritical beliefs and personal opinions which cannot be substantiated by experimental evidence have no place in psychology or in any other science. The personal opinions of one hundred or of a thousand persons are often of no more scientific value than the opinions of just one. It was not one ancient man but many who believed that disease was associated with the activity of evil spirits, but the fact that many persons shared this belief obviously could not establish either the truth or the error of their explanation of disease. Science demands that beliefs and opinions be put to the test before they may be considered of any value.

The student nurse does not have to look far beyond her immediate circle of acquaintances to find illustrations of the difference between opinions about human behavior and scientifically established truths. Suppose that an argument has arisen concerning the most important characteristics of a good nurse, and that the following opinions are expressed: "any intelligent girl can become a good nurse;" "if a girl is emotionally stable she can become a good nurse;" "if a girl likes nursing she can become a good nurse no matter what obstacles may appear to be in her way." Suppose, further, that the supporter of each viewpoint has agreed that the nurse must have good physical health and that she must be a high school graduate. We have the basis for a spirited argument. The chances that new truths will be brought to light in such an argument are, however, very slim. Miss A, in contesting that intelligence is of the greatest importance, calls attention to many good nurses who are highly intelligent, but she forgets to mention some very intelligent young women who have not been able to complete training. Miss B, in arguing that emotional stability is the supreme essential, fails to mention some students who are very well adjusted emotionally but who are unable to pass examinations in subject matter. Miss C, arguing that a person who likes to nurse can overcome all obstacles, mentions certain students of only average intelligence who also tend to be rather emotional in their reactions but who nevertheless are making

a success of their nursing, but neglects to mention failing students who like nursing.

Arguments such as this make practically no contribution to scientific knowledge for several reasons. In the first place, those who enjoy such contests very often *make no effort to distinguish between fact and opinion*. Those who do yield, yield, as a rule, because of boredom or weariness and not because they have been convinced.

In the second place, facts which are mentioned are usually only partial truths. In gathering evidence to support his argument the observer tends to *see what he wants to see*. This is equally true of those who listen to an argument, because they too tend to *heed what they want to heed*; evidence which does not support their own viewpoints tends to fall upon deaf ears.

Another reason why exchange of opinion is of so little value in science is that *the average person likes to keep his prejudices*. A person who takes part in a debate usually has just one purpose; he wants to convince others that he is right and that they are wrong. Debates or discussions which are started for the purpose of weighing opinions tend to be more useful, however, than mere argument.

A fourth common tendency is illustrated in most contests of opinion. When certain circumstances or conditions are associated, we tend to reason that the one is the *cause* and the other the effect, when, as a matter of fact, we are justified only in arguing that certain circumstances go together. To illustrate this let us return to the argument of Miss A, who maintains that if a student is intelligent enough she can become a good nurse. Miss A notes that many successful nurses are intelligent and she argues that they are successful *because* of their intelligence. Miss B notes that successful nurses are usually well adjusted emotionally and she argues that emotional stability *causes* the student to become a good nurse. Miss C, noting that a student who is neither superior nor extremely well adjusted, is, nevertheless, making a success of her training, looks about for an explanation and finds that the successful candidate likes nursing. Miss C, therefore, concludes that a liking for nursing is a *cause* of success.

There are numerous reasons why facts about human behavior are not to be brought to light in any way except through scientific study. Two very common errors in observation will serve to illustrate further the need for scientific methods. *We tend to label rather than to explain*. The problem of a patient in the hospital is often dismissed with a label, and, having given the problem a name, the student nurse is satisfied to do nothing more. Here for example is a child who seems to crave attention. His adjustment problem is labeled "he just wants attention" or, perhaps, "he is just a spoiled child".

A person who gives orders in a peremptory manner is, perhaps, said to have a "superiority complex", in contrast with a meek, submissive person whose label is "inferiority complex". In evaluating the use of labels, the student nurse has only to consider what it would have meant in the development of medical science if diagnosticians had been satisfied to label human ills without attempting to explain and to remedy them. The science of human behavior has not advanced by way of labels without experiments.

An additional reason why the casual observer is so incompetent in interpreting human behavior is that *we are so often limited in our perspective*. We see problems from only one angle. To a salesman a man is primarily a prospective customer; to a factory worker he is, perhaps, a foreman or a boss; in the eyes of his children he is a person who takes them places and buys things for them; to his wife he is a cherished companion; to the nurse he is perhaps just another patient. In order to find out anything of consequence about such a man it would be necessary for the salesman, the worker, the child, the wife, the nurse and innumerable other persons to pool their observations so as to obtain a composite of all of their judgments. Even granting that it might be possible to proceed to compile the observations of innumerable untrained persons, each one viewing the man from a different angle, the results would be of questionable value in a scientific study of his behavior. The final compilation would be no more reliable than its faulty parts.

A few further illustrations may clarify what is meant by unscientific, *cause and effect* reasoning. An observer notes that a wailing baby stops crying when a rattle is put into his hands and, in the light of that one observation, concludes that the baby cried because he had no rattle. Another observer, noting that a child who has a temper tantrum becomes pleasant and agreeable when given candy, argues that the child has his temper tantrum in order to get the candy. Noting that worry upon the part of a patient is often associated with certain ailments, the nurse may conclude, too hastily, that worry is the basic *cause* of many such ailments. As we shall see later, worry is *associated with* various ills.

THE METHODS OF SCIENCE

Arguments Replaced by Experimentation.—Science replaces argument and exchange of arm-chair opinions with experimentation. Consider, for example, our illustrative argument about the most essential characteristics of a good nurse. There are some facts available to students who are interested in learning something about the relation of intelligence, emotional stability and interest to vocational success in various fields. Psychological research

suggests, however, that no one characteristic is responsible for success or non-success.

The relationship between student nurses' ratings on intelligence tests and successful completion of the hospital school curriculum has been studied in various situations. Such studies tend to support the opinion that intelligence is *one* important factor in predicting success. Emotional stability is, obviously, an essential to success in many vocations. In psychological literature, numerous studies suggest that vocational success is, in general, related to emotional stability. The argument that a student who likes nursing can make a success of her work, regardless of other factors, can be answered only indirectly; experimental studies suggest that both intelligence and emotional stability are related to vocational success; other studies indicate that success and failure do not depend upon a single trait.

Testing Hypotheses.—If we were to try to evaluate each contestant's *hypothesis* and were to study the relative importance of intelligence, emotional stability and a liking for nursing, as factors contributing to success, we should find it necessary to plan and carry on an elaborate research program.

In the first place we should need to find tests which would prove to be satisfactory measures of each of the three *variables*, (intelligence, emotional stability and liking). Some such tests are now available; it might be necessary to create others. We should also need precise measures of success in the field of nursing.

Having provided the needed tools of measurement we should proceed to test hundreds of students and graduate nurses. Next, we should make an analysis of the relationship between each of the three variables and our measure of nursing success. This would involve complex statistical procedures, because we should need to compare students who were alike in the two variables and who differed in only one. We could compare students who had different ratings in intelligence, for example, only after eliminating possible differences in the other variables; otherwise we could not draw any conclusions.

The student nurse need not be concerned with the technics of an experimental study, but it is important that she learn to have a profound respect for scientific facts which are not discovered without great effort. The methods of psychology are like those of any other science. Like other sciences, psychology offers a challenge to lazy thinkers.

Summary of the Methods of Science.—The untrained observer tends to not distinguish between opinions and facts; science demands facts and values opinions only after they have been carefully tested and evaluated.

The untrained observer tends to see what he wants to see. In other words, he is biased or prejudiced in his judgment. In a scientific study of human

behavior, facts are not gathered in order to prove a viewpoint; viewpoints are based upon facts.

The average person likes to keep his prejudices and is resistant to change; science on the other hand is a never ending quest for viewpoints that are new.

When two sets of circumstances happen in close sequence the average person is inclined to believe that one set of circumstances is cause and the other effect; science tends to stress relationships more often than cause and effect.

The average person is satisfied when he has given a name or a label to some aspect of human behavior; science, on the other hand, seeks explanation rather than labels.

The untrained observer can attain only a limited and usually faulty perspective on any behavior that he may observe; science attempts to eliminate the observer entirely from his observation.

SUMMARY

Psychology is the science of human behavior. It is about man and what he does, thinks and feels.

The beginnings of man's interest in his fellow man are veiled in antiquity. In the literature of the ancient folk we can detect a recognition of common human traits and some insight into methods of controlling behavior.

Science owes its origin to man's undying curiosity about his fellows.

Before scientific methods of studying behavior had been evolved, one man's guess was as good as another's, because methods of evaluating guesses were unknown.

Long before belief in the supernatural had given way to more scientific explanations of human behavior, Hippocrates, the founder of medicine, in attempting to explain behavior in terms of the human organism, made a significant contribution to psychology.

Experimental psychology is a product of biological sciences.

The untrained observer makes many errors in his observations of human behavior and is faulty in his interpretations.

Science tends to eliminate the observer from his observations.

SUGGESTED ACTIVITIES

1. **Group discussion or personal reaction.** Apply some of the methods of science to adjustment to life in the training school.

(1) Illustrate the use of *opinion rather than facts* in explaining the be-

havior of a senior nurse who makes use of her priority privilege in the cafeteria line.

(2) Illustrate what is meant by *eliminating the observer from his observations* in reacting to regulations, such as those pertaining to signing in at night.

(3) Contribute illustrations, from your own experiences, of what is meant by *seeing what we want to see* and *liking to keep our prejudices*.

2. **Group discussions.** *Psychology aims to predict and control human behavior.* In the light of what you now know about science, to what extent do you believe that you can predict behavior?

3. **A group experiment in predicting common responses to a list of words.** On another page of this text there is a list of stimulus words which have been used in a study of certain pathological conditions. In order to evaluate unusual reactions, common responses have been tabulated. On the basis of this tabulation we can predict some of the responses which a normal group will make. In using the list, you will find that some words are better than others in eliciting the expected response. Base your discussion upon the responses which are most common. For a group experiment, have one person read the words, pausing only long enough, after each word, to make it possible for each of the listeners to write the first word which occurs to her. Quick response is necessary.

If you are interested in trying this experiment, ask one person to read the list which is to be found at the end of Chapter III of this text. After all responses have been written, compare the replies of your group with responses found to be common before most of you were born.

Discuss: (1) Can we predict anything about the response of a group? (2) Can we predict each person's responses? (3) Upon what basis can we predict human behavior? (4) In general, do predictions which are based upon experimentation, predict how the *whole group* will respond or do they predict how the *majority* will respond?

4. **Personal reaction.** Does the phrase *control of human behavior* suggest domination of another person? Can you think of control that is not domination? Can you illustrate?

5. **A notebook suggestion.** *Test your beliefs.* Below are some items, taken from a test which was given to senior pre-medical students. Many faulty beliefs were discovered. Test yourself by writing *true* or *false* in answer to each statement. Write your answers in your notebook, so that you may refer to them from time to time, as the course progresses. The answers are to

be found at the end of Chapter X of this text. You may be interested in re-testing yourself several times before you refer to the correct answers.*

1. _____ All feeling involves the nervous system.
2. _____ Thinking is dependent upon sensory experience.
3. _____ In some mental processes the mind functions without any corresponding activity in the nervous system.
4. _____ Much mental fatigue is, in reality, physical fatigue.
5. _____ There are chemical changes in the blood when a person is angry.
6. _____ Women are, in general, possessed of a power of intuition which men do not possess as a rule.
7. _____ People who have any real creative ability should always be advised to go into the fine arts.
8. _____ An expert can always tell what emotion a person is feeling by closely observing his facial expression.
9. _____ The best way to regulate our emotions is to keep them entirely separate from our intellects.
10. _____ All emotional instability is due to improper glandular functioning.
11. _____ A genius has a special kind of intelligence not possessed by other people.
12. _____ The average child begins to reason when he is about 12 years old.
13. _____ Boys are born with an interest in mechanical things; girls with an interest in dolls.
14. _____ The old are not as likely to welcome new ideas as are the young.
15. _____ Knowledge of progress is an aid to effective learning.
16. _____ Choice of a vocation should depend strictly upon one's native interests.
17. _____ Psychologists can, with the aid of tests, determine what specific vocation a high school boy will succeed in.
18. _____ Breaking a habit may be said to be learning.

SUGGESTED READING

Valentine, Willard L. *Experimental Foundations of Psychology*, New York: Farrar and Rinehart Inc., 1941

For a discussion of phrenology and other attempts at character analysis, read Chap. II.

* Test items are selected from Ralya, L. L. "Beliefs of Senior Pre-medical Psychology Students," *J. Appl. Psychol.*, 1944, 28-35-42. Used by permission of the author and publisher.

Zilboorg, Gregory, and Henry, George W. *A History of Medical Psychology*, New York: W. W. Norton & Co., Inc., 1941.

For a discussion of ideas of the early Greeks, read Chap. III.

Morgan, Clifford T. *Physiological Psychology*, New York: McGraw-Hill Book Co., 1943.

For a consideration of methods used in physiological psychology and a brief history of the development of modern experiments, read Chap. I. (This is a more technical reference than either 1 or 2, but extremely suggestive.)

REFERENCES CITED IN THIS CHAPTER

- ¹ ZILBOORG, Gregory, and HENRY, George W. *A History of Medical Psychology*, New York: W. W. Norton and Co., Inc., 1941, Chap. III.

Chapter II

PSYCHOLOGY AND THE STUDENT NURSE

Psychology, as noted in the preceding chapter, is a study of human behavior. It is about man and what he does, and thinks, and feels. Because she is preparing for a career in which a knowledge of her fellow man is one of the first essentials to success, the student nurse is, of course, interested in learning as much as possible about human nature. She is, however, during the first months of her training, more or less preoccupied with her own immediate adjustments and would no doubt like, through a course in psychology, to gain greater insight into her own reactions. One of the major purposes of this chapter is to assure the student nurse that psychology is not just about man in general; it is about the student herself.

A second purpose of this and the next chapter is to provide a setting for topics which will be discussed in the text. With the chapter which follows it should serve as a *preview* of the text and should, at the same time, convince the student that psychology deals with concrete, everyday adjustment problems such as those which confront the student nurse. It presents an over all view of a practical science.

With these two purposes in mind let us look at the prospective nurse herself, the student to whom this text is directed. In order that we may view her with a common perspective let us look at her as she enters training.

WHAT BRINGS HER?

Everything that she has ever done has been a factor in her choice of the nursing profession. The reactions of her parents, brothers and sisters, neighbors and other associates to her, and her own reactions to them have contributed to her choice. Her patriotic ideals, her beliefs, social interests, and her attitudes toward children and toward the weak and the helpless have been factors in her choice of her vocation. It would be impossible to list all of the experiences which have combined to send the student nurse into training, because as has been indicated, everything that has ever happened to her has been a factor in her choice of the career of nursing. This is just another way of saying that every student nurse has her own unique background of experi-

ences which have combined to make her the kind of person that she is and have led her to choose the career that she has chosen.

Many motives for becoming a nurse are, however, shared. It is a common practice in psychology classes for the instructor to ask student nurses to state why they have chosen their profession. Replies nearly always mention professional considerations such as job opportunity, the stability of income, and the usefulness of the nursing arts. The desire to serve in a period of national crisis is usually mentioned in wartime. Some students state that they have considered the prestige of the nurse, and others mention, as a factor in their choice of the profession, a sense of worthiness which accompanies service to humanity. Very many indicate a liking for people and a desire to help them. This liking for people is shown also in nation-wide surveys of student motives.

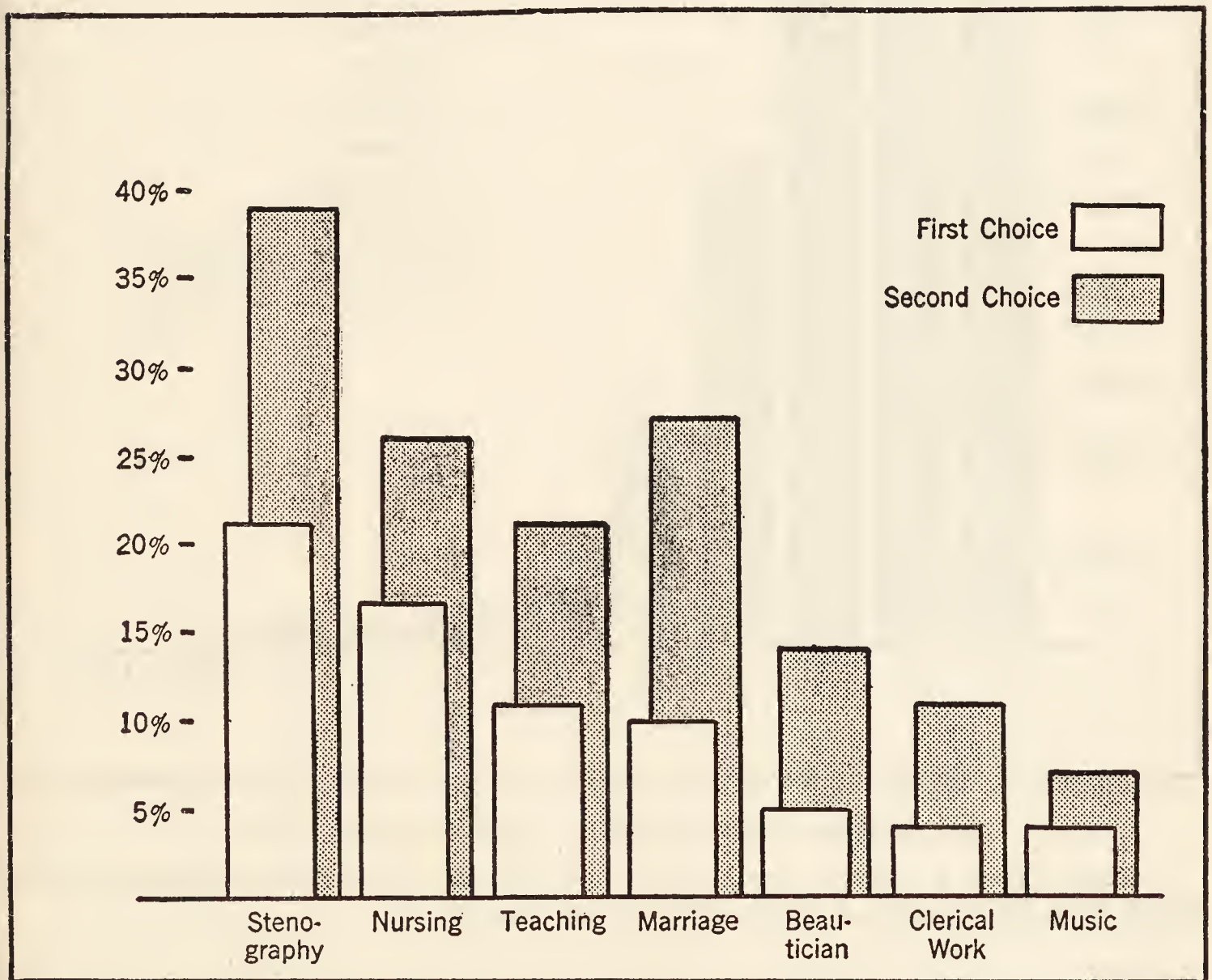


FIG. 1.—VOCATIONAL CHOICES OF 2361 HIGH SCHOOL GIRLS IN PERCENTAGES.

(Adapted from Boynton, P. L. and Woolwine, R. D., "The Relationship Between the Economic Status of High School Girls and Their Vocational Choices". *J. Appl. Psychol.*, 1942, 26, 403.)

Early Interest in Nursing.—A career of nursing is often chosen during high school years or earlier. It appears that girls who enter nursing do not, as a rule, drift into the profession without giving much thought to their choice. In studies of the vocational preferences of high school girls, nursing is found to be one of the vocations most often mentioned. The results of one such study are shown in Figure 1, which is based upon a survey of more than two thousand girls. The seven vocations, shown in the figure were chosen by more than 70 per cent of all girls. Nursing, as may be noted, was second in the list of preferred vocations.

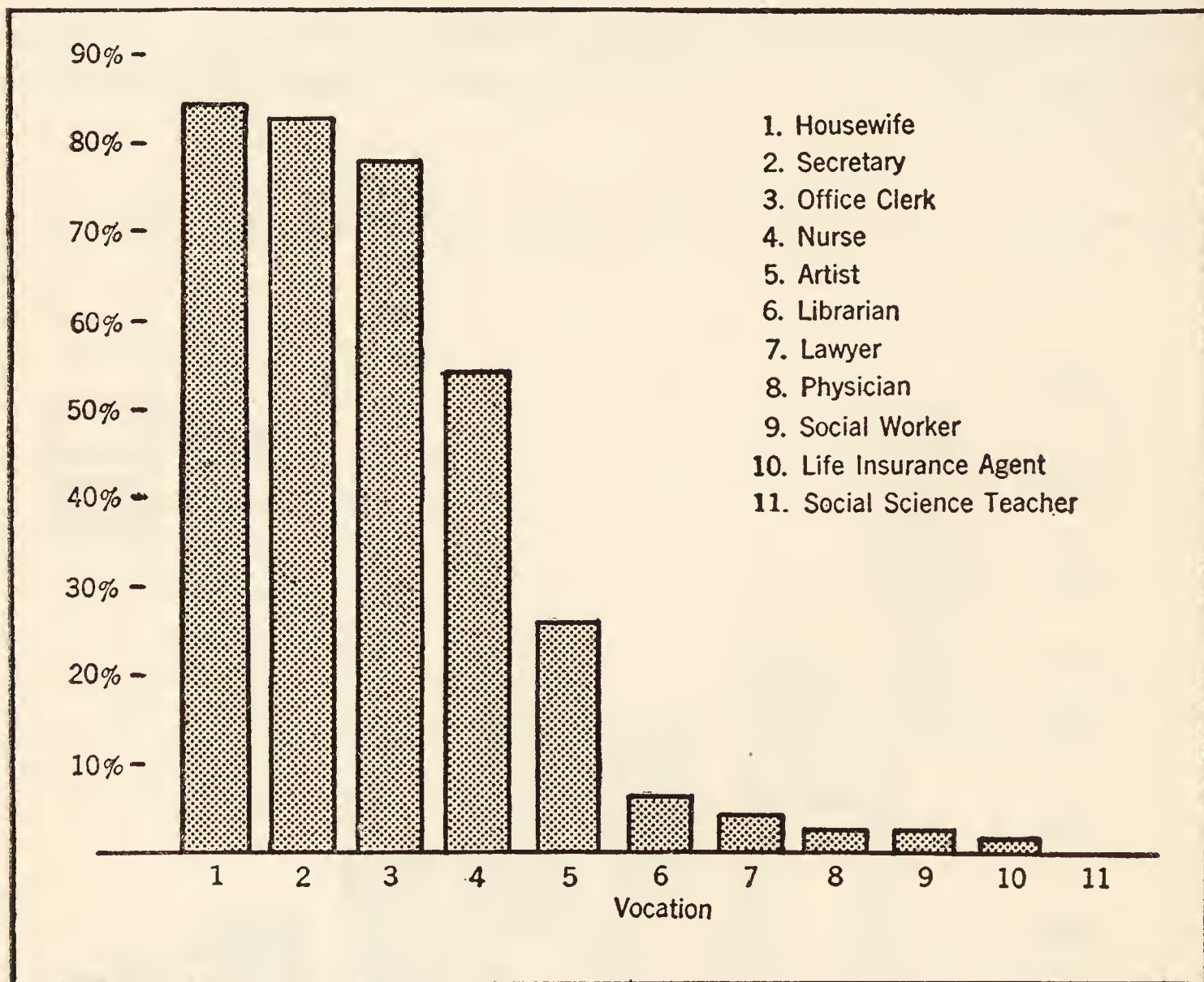


FIG. 2.—VOCATIONAL INTERESTS OF HIGH SCHOOL GIRLS.

(Adapted from Taylor, K. Van F., "The Reliability and Permanence of Vocational Interests with Adolescents". *J. Exper. Educ.*, 1942, 11, 83.)

In vocational counseling in schools, tests of interest in different fields of work are often used. Such tests suggest that a student likes certain activities better than others. The results of a study, by means of interest tests, of activities liked by high school girls are shown in Figure 2. More than 50 per

cent of girls participating in the study indicated a liking for nursing activities. While a liking for nursing activities does not necessarily imply ability to become a nurse, a student who qualifies in other respects has an advantage from the beginning of her training if she likes the work which a nurse has to do.

WHAT DOES SHE BRING WITH HER?

Each student brings to her training her own unique equipment: her interests, her academic stock in trade, her particular aptitudes, her physical assets and liabilities. She brings her own peculiar set of social and emotional habits and her own specialized attitudes toward her family and her associates. Above all she brings her own specialized attitudes toward herself.

Child-In-The-Home-Habits.—We set out to discuss what the student nurse takes with her when she enters training. We are obviously concerned with much less tangible possessions than the actual luggage with which she arrives at the training school, but, by being very literal, as we view the new student as she steps over the threshold of the school, we may learn something about her less tangible equipment. Sometimes she arrives alone, bearing up cheerfully under a load of suitcases, hat boxes and other necessary encumbrances. Often, she and members of her family share the burden of luggage. Once in a while, and in one training school this was frequently noted, she arrives freshly groomed, radiant, eager and empty-handed, accompanied by a weary father struggling under his load and a mother whose progress is impeded by hat boxes, packages and other last minute possessions which she carries for the daughter who is stepping out from under the parental roof into an adult world.

From this one glimpse of a carefree and thoughtless young person we can suspect that she takes into the training school a number of *child-in-the-home-habits* which will prove far from useful to her. Although she represents an extreme of childish abandon and is not typical of entering student nurses, she is not alone in her retention of some child-in-the-home-habits. Even the most independent and self-reliant of students takes with her, into the hospital school, certain habits which she has found satisfactory as a young member of a family group.

Habit revision is a long slow process; habits are not changed over night. It is inevitable that many young women who go directly from their families to the training school should find themselves equipped with ways of behaving that are somewhat handicapping. Many habits which are suited to life in a family but not to training are modified during the early weeks of life in the hospital school. The nature of child-in-the-home-habits and the possibilities

of changing them are suggested in a list of learnings reported by student nurses in several psychology classes. Asked to state what they had learned during the first few months of training, students frequently mentioned such learnings as the following:

I have learned to eat food that is not like mother's.

I have learned to be neat in my room.

I have learned to save money.

I have learned to divide my time or budget it for work, and study, and play.

I have learned to do my own shopping without the advice of my mother.

I have learned to decide matters for myself and not depend upon my mother for her decision.

I have learned to live away from home for the first time in my life.

These few statements suggest that launching oneself upon a new career means that some old habits are to be broken, others are to be nurtured and strengthened, and new habits are to be established. Although the learnings mentioned are very simple, it is not at all unlikely that, in some instances, such new habits are acquired with considerable difficulty.

Social Habits and Attitudes.—One of the most urgent problems of the beginning student nurse is the establishment of happy, workable human relationships. That all are not equally successful in this respect is self-evident; students differ greatly in the social habits with which they enter training. Life in an institution involves many social adjustments. One student nurse in writing about what she had learned in a few weeks said, quite pathetically: "As far as living with other girls is concerned, I haven't learned much except to wait for the bathtub even if I have to wait for two hours." One wrote, "We need lessons on how to get along with each other." One said, "I have learned to lend practically three-fourths of my belongings." Another, in a single statement, suggests the plot of a success story involving trials and tribulations about which many student nurses could write with feeling: "I try not to get angry when a girl about twice my size wears my sweaters without asking if she can."

Others writing in a more cheerful vein, reported many such learnings as the following: "I've learned to think of others, especially in the use of the bathroom;" or, "I've learned to let other people have their way." Statements such as these suggest that many students have a developing insight into human nature which tends to make group adjustments easier.

The social interests, beliefs, prejudices and outlook on larger social issues which characterize each student nurse as she enters the hospital school are

significant in her long time adjustment to her profession. They are also of immediate significance in their contribution to her uniqueness as a personality.

Emotional Habits and Attitudes.—Some student nurses find it hard to adjust to a way of living which is, of necessity, much less personal than life within one's family. Accustomed as most students are to their parents' enduring and personal interest, some find it somewhat difficult, at first, to be happy in a situation in which no one student is the object of special solicitude and consideration. Others may experience some difficulty in adjusting to the exacting requirements of the curriculum or to the regulations of the school.

Early training, in many instances, has stressed the importance of restraining emotions, of "not letting any one know how you feel." *Psychology, however, teaches that the way a person feels about himself is as important in his adjustment as what he does.* Everyone, in the course of living, has acquired many tendencies to make his behavior conform to the behavior of others. The student nurse during the early weeks of her training has ample opportunity to learn the importance of conformity. It is highly important that she should adjust by conforming in many situations; but *it is just as important that she should feel that she is a worthy person.* To feel worthy is as essential to good adjustment as is desire to conform. A good balance between socialized motives and motives of personal worth constitutes good emotional adjustment.

The emotional reactions of the student nurse are more significant in her adjustment to training than any other habits with which she starts her professional career. As a matter of fact, it is impossible to evaluate her child-in-the-home and social habits and attitudes without considering how she feels about all that she does and all that others do to her.

Study Habits and Attitudes.—The curriculum at the hospital training school is not an easy one for even the best prepared of student nurses, but the student who enters training with a sound foundation in basic subjects and an already developed interest in courses that are taught in the training school has a better chance of success than one whose foundation is weak and who lacks interest in essential subjects.

Subject Matter Preferences and Prejudices.—In filling out blanks in connection with their applications for admission to training schools, students often have an opportunity to indicate high school subjects which are liked and those which are disliked. Because likes and dislikes of certain academic subjects seem to be significant in the early adjustments of student nurse to the training school curriculum, an analysis was made of the personal data

sheets of student nurses from a number of hospital training schools. For purposes of comparison, similar items from the personal data sheets of university freshmen were also analyzed. The results of the study are shown in Figure 3.

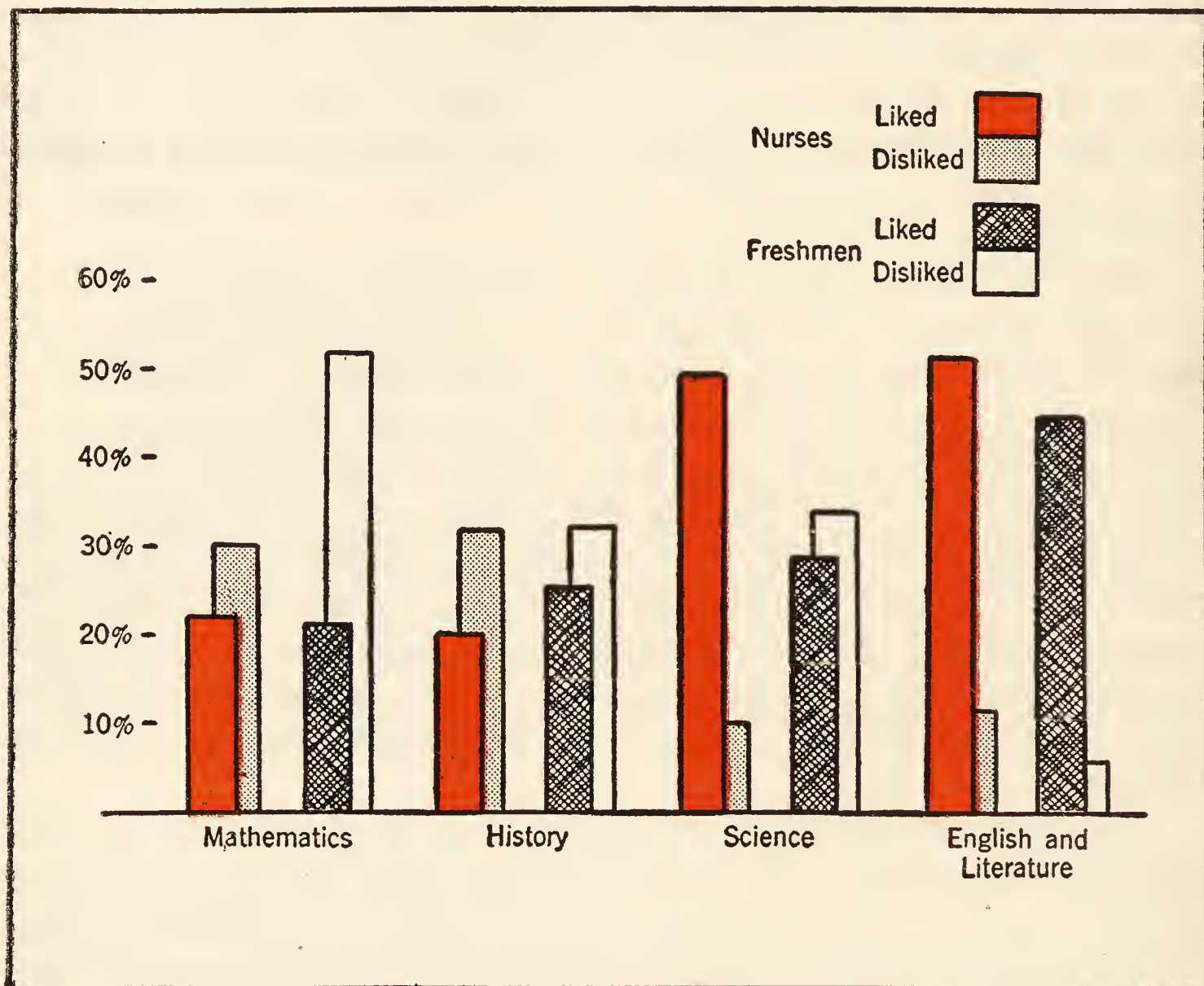


FIG. 3.—SUBJECTS LIKED AND DISLIKED IN HIGH SCHOOL.

It is often assumed that student nurses as a group tend to like science. A study of the figure suggests that more student nurses than college freshmen do express a liking for science. However, a liking for science was indicated by less than half of the students in the nurse group, while some, as may be noted, indicated a dislike. The training school curriculum necessitates frequent use of mathematical skills. Slightly more than one in every five nurses indicated a liking for mathematics. The percentage of college freshmen expressing a liking for mathematics was approximately the same. It is perhaps significant that three out of ten student nurses express a definite dislike for mathematics. If a liking for mathematics is in any way related to success in the

use of mathematical tools, Figure 3 would seem to indicate that some students enter the training school with a handicap.

From her study of psychology the student nurse may learn that likes and dislikes are subject to the principles which govern other learnings; antipathies and preferences can be revised. Figure 3 suggests that students might find it profitable to take stock of assets and liabilities in the way of subject matter preferences and prejudices.

Variations In Academic Background.—Because high schools tend to have such varying standards, high school grades are not always satisfactory indications of academic background. It is for this reason that scholastic ability tests are often included in batteries of tests given to nursing candidates. It may be interesting to the student nurse to consider how different members of any one class are likely to be in subject matter background. Figure 4 shows how two student nurses compare with hundreds of student nurses on scholastic ability tests. Miss A rates well above average on practically all tests and is exceptionally high in several ratings. Miss B, on the other hand, rates above average in only one set of subject matter tests, tests of natural science. In reading, in one phase of English and in mathematics her rating is exceptionally low. We cannot predict Miss A's success or Miss B's non-success on the basis of subject matter tests alone, but it is obvious that Miss A has *one* initial advantage over Miss C.

Misfit Study Habits.—Regardless of scholastic background and interest in subject matter, most student nurses find that some of the study habits which served them reasonably well in high school are no longer very useful. The student nurse must often study under conditions which are different from those to which she has been accustomed. She finds it necessary at times to study in the midst of a certain amount of noise and bustle; it is often not easy for her to disregard the activities of her associates in order to concentrate upon her immediate task. She sometimes finds it very difficult to establish a study schedule while adapting to a pressure of work which is greater than any which she has previously experienced. She does not have as much choice as formerly as to the time and place for studying. Insight into her own allocation of her study schedule appears to be one of the most urgent needs of the beginning student nurse.

Learning Problems Which Confront Her.—The hospital school curriculum is such that the student must adapt herself to programs of learning which are somewhat unique. Early in her training she finds it necessary to acquaint herself with a new terminology. She must learn new motor skills. She needs to organize her learnings for use.

Memorization.—The technical vocabulary which is to be used throughout

her professional life must be learned before she can participate intelligently in the hospital routine. Ordinarily we acquire vocabularies informally; we learn the meanings of many words in a leisurely fashion and through first

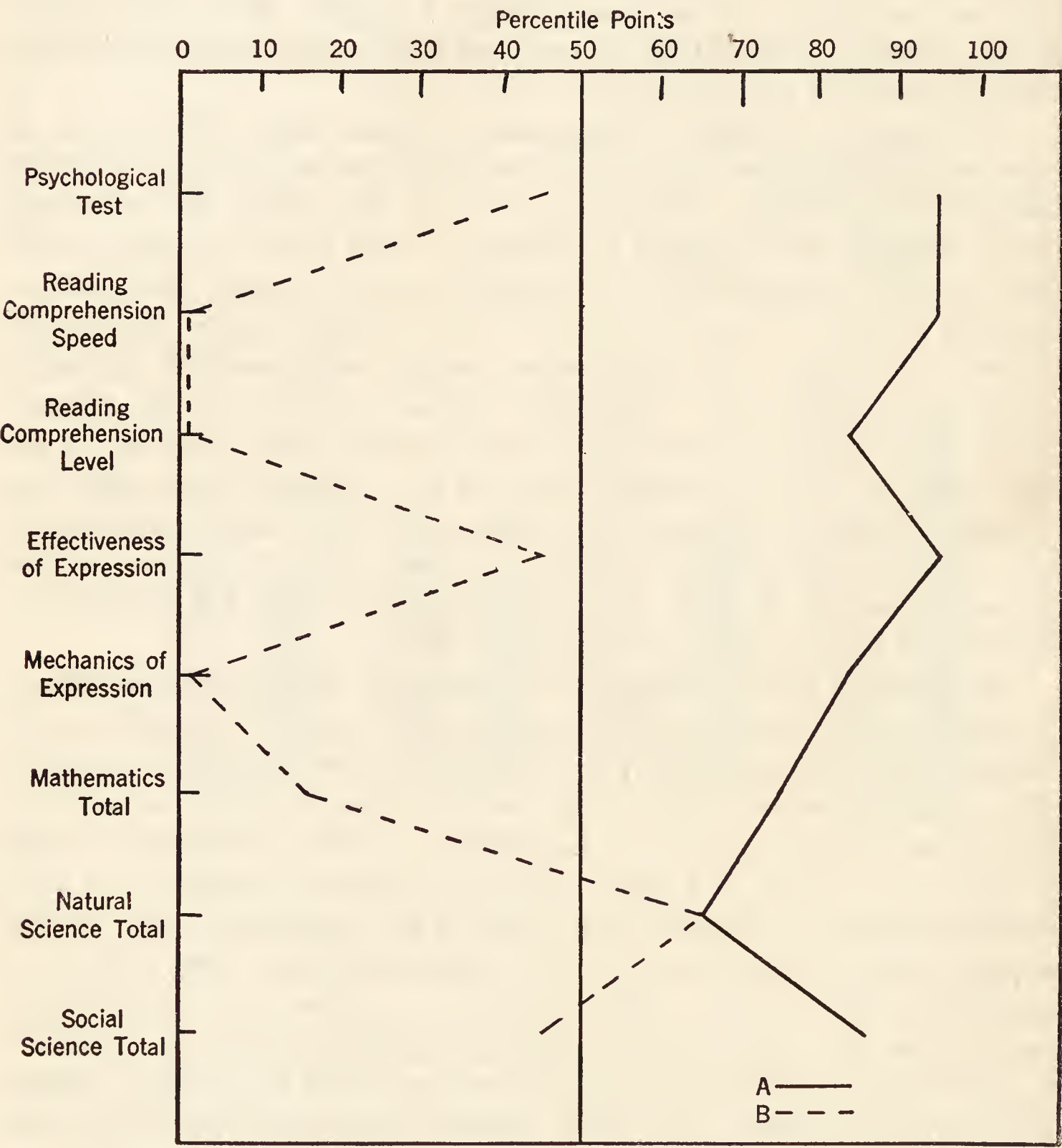


FIG. 4.—PROFILES OF TWO STUDENT NURSES SHOWING DIFFERENCE IN ACADEMIC BACKGROUND.

hand experiences. The vocabulary of nursing arts must, obviously, be learned with great precision and as soon as possible. More memorization is involved in learning this new professional terminology than in acquiring the vocabularies of everyday life. In some of the basic subjects there is also some con-

tent which the student must memorize. There are specific problems related to memorization which confront the student nurse. Many are poorly equipped at first to meet such problems.

Motor Skills.—The skills of nursing, like the terminology, are precise and cannot feasibly be learned in a leisurely way. There have been many studies of procedures which appear to be useful in acquiring motor skills. Specific problems of motor learnings are discussed in this text as in most textbooks of psychology.

Organizing Knowledge For Use.—The program of the student nurse is such that she must organize her learnings for use as soon as she can. She can organize best when she appreciates why certain subject matter is deemed essential to her training. As soon as she can recognize how the various aspects of her curriculum are related, she can begin to put her learnings into practical use. She is thus better able to set her own goals and to evaluate her own progress.

In many aspects of her study program the student nurse appears to be in need of help. One chapter of the text is devoted specifically to this need.

WHAT LIES AHEAD?

In the course of her training, the student may expect to discover that her personality has changed. As she grows in professional skill she may look forward to changes in social and emotional habits, in social outlook and in her attitudes toward herself and her fellow man. As she appreciates more fully the standards of her profession, she will find it useful to define some of her personal objectives, so that she may have some means of evaluating her progress in aspects of growth that are not measured by training school grades. In a commencement address to a group of hospital school graduates, one educator listed the ten most important characteristics of a nurse.* In lists such as this the student may find a suggestive statement of her own goals both immediate and remote.

1. Genuine liking for people and ability tactfully to work with and for them.
2. High grade of intelligence and understanding with good general education and broad interests.
3. Emotional maturity, stability and self-control seasoned with patience and a sense of humor.
4. Good physical health and cheerful personal outlook.

* From an address given by L. K. Ade, State Superintendent of Public Instruction in Pennsylvania.

5. Integrity of character; exemplary ideals and morals; refined tastes; tolerance.
6. Sense of responsibility coupled with personal reliability and loyalty.
7. Attention to details, good observation with scientific attitude and open-mindedness.
8. Resourcefulness and adaptability.
9. Cleanliness and attractiveness in appearance.
10. Ability to teach.

Characteristics such as the ones listed above are not distributed on an *all-or-none* basis. No student who enters training is likely to be *completely lacking* in the personal qualifications of a good nurse. If she had not, already, made considerable progress along lines such as those indicated, her undertaking would be marked for failure from the start. Suppose, however, that she is *relatively* weak in some of the characteristics which are believed to be essential to a successful career as a nurse, should she expect to be able to overcome her handicaps?

If, for instance, she should tend to be indifferent in her attitudes toward people, can she learn to like them? Psychology has an answer to that question; she can learn to like people in much the same way that she can learn to like poetry, music or art. It has often been demonstrated that acquaintance is a first step toward liking and appreciation. This problem will be considered in more detail in a later chapter.

The next qualification, a high grade of intelligence, can only be touched upon at this point. A student whose rating on a college aptitude test is very low will probably have difficulty in meeting the standards of the training school. The significance of intelligence and intelligence tests will be considered a little later. As for *understanding*, a *good general education* and *broad interests*, the possibilities of growth are, of course, obvious, although often not fully appreciated.

Continued growth in emotional maturity and stability is to be expected of most student nurses, although some will, no doubt, grow more than others. A student who, when she enters training, is highly emotional, erratic in her reactions and easily thrown off balance may find that nursing is a hazardous profession for her. It is too exacting for anyone who tends to be overly emotional in her reactions. Furthermore, an unstable nurse provides a hazard for her patients. Under proper guidance, most persons can be expected to grow in emotional maturity, but just how much an extremely unstable person will improve cannot always be predicted. A student nurse who withdraws from the hospital school because of emotional instability or immaturity may find, in some other vocation, opportunities to become relatively mature

emotionally. All the other characteristics in the list seem to be within the reach of most student nurses.

Psychological studies suggest that it is advantageous to define goals; children in schools seem to learn better and workers in industry appear to work more efficiently when their activities are goal-directed. Throughout her training the student nurse will be benefited by a definition of her goals. In statements of the qualifications of a good nurse the student may find suggestions of long-time personal growth objectives.

SUMMARY

A study of psychology is of practical value to the student nurse.

All the experiences which a student has had enter into her choice of the nursing profession.

She takes with her, as she enters training, every characteristic which contributes to her uniqueness as a personality: her habits in relation to her family; her social habits and attitudes; her emotional habits; her subject matter preferences and prejudices; her special academic background; and some misfit study habits.

She is confronted by learning situations which are different from those to which she has been accustomed in high school: she must often memorize content; she must learn new motor skills; she must organize her knowledge for early use.

With the acquisition of new knowledge and skills she may anticipate changes in her personality. A recognition of goals is an aid to learning and to efficiency in practice.

SUGGESTED ACTIVITIES

1. **Committee projects.** Since this is a preview chapter, and planned to invite discussion, more than to present new facts, the organization of small discussion groups may prove a worth while activity. You may wish to form into small committees of four or five members, to discuss and to bring to the attention of others in the class, the results of your joint deliberations on problems selected from the following:

- (1) Illustrations of child-in-the-home habits which members of the committee consider significant.
- (2) Illustrations of social habits and attitudes.
- (3) Illustrations of emotional habits and attitudes.
- (4) Illustrations of study habits and attitudes.
- (5) Illustrations of new learning problems of the student nurse.

2. **Group discussion.** Below are some suggestions of habits which the student nurse should acquire.

- (a) The student nurse must learn as soon as possible to do each accepted task as well as possible.
- (b) She must learn to get assignments straight and completed on time.
- (c) She must obey orders implicitly.
- (d) She must be responsible at all times.
- (e) She must show consideration for others.
- (f) She must develop a scientific point of view.
- (g) She must increase her interest in and her knowledge about people.

Discuss as follows:

- (1) If the student meets all these requirements will she be a good person as well as a good prospective nurse?
- (2) Can you think of any addition which should be made to the list?
- (3) Do you believe any of the suggestions to be unnecessary?

3. **Personal reaction.** Try to trace some habit to experiences which you have had as a child.

4. **Notebook suggestions.**

- (1) After studying the characteristics of a successful nurse, formulate four or five immediate goals for yourself. (By *immediate* we mean goals for the next week or two.) Enter these in your notebook, leaving space for additions and for later comments on help which you may have gotten from your study of psychology.
- (2) On another page in your notebook, state what you believe to be your hardest adjustment problem. Leave space for later comments on your progress in making the adjustment.

SUGGESTED READING

Bennett, M. E. *College and Life*, New York: McGraw Hill Book Co., 1941.

For a discussion of goals and problems of self-direction, read Chapters I and II. Environmental influences are considered in Chapter XVIII. For a discussion of how to appraise yourself, read Chapter XIX.

Ham, A. W. and Salter, M. D. *Doctor in the Making*, New York: J. B. Lippincott Co., 1943.

This book, as the title suggests, is written for medical students. There is much material which can be made to apply to the student nurse. Many parts of Chapter VIII, "Your Child-Self," can be made applicable to our discussion of "Psychology and the Student Nurse."

Shrodes, Caroline, Van Gundy, Justine and Husband, Richard. *Psychology Through Literature; An Anthology*, New York: Oxford University Press, 1943.

This is a compilation of excerpts from literature which illustrate various aspects of psychology. In connection with this chapter, the section on "Influence of the Family," pp. 35-79, is recommended. Select one or more of the five excerpts.

Tyler, Harry E. (Ed.). *Learning to Live*, New York: Farrar and Rinehart, 1940.

For a consideration of how you may learn to live with yourself, read Chapters V, VI and VII. For a discussion of how to get along with others, read Chapters XIII and XIV.

Chapter III

PSYCHOLOGY, THE NURSE AND HER PATIENTS

The student nurse learns many precise nursing technics. There is, for example, a right way to make a bed with a patient in it, to give a bath, or to prepare and administer medications and treatments. As soon as she begins to practice her precise technics, however, the nurse discovers that, while methods of doing certain things are uniform, her patients are not. Like the student nurse who takes with her into the hospital school all the habits, attitudes, beliefs, prejudices and preferences which set her apart as a unique person, each patient takes with him every characteristic which makes him an individual.

One of the first things that the student nurse notices is that patients react so differently to her. Some are cooperative and friendly, and respond in a cordial way, while others are aloof and in some instances antagonistic. Some are demanding and some patiently grateful for all services. She notes also that they differ in their emotional reactions. Some appear to be worried, tense, and definitely fearful, while others are cheerful and appear to be reasonably contented. She will observe many other differences: some patients seem to learn slowly while others respond readily to instruction, they differ in their reactions to frustration, in the way that they occupy idle hours and in other respects too numerous to mention. It is obvious to the nurse that no two patients are alike.

Some student nurses who had had floor experience, but were just beginning a course in psychology, were asked to list the traits of an ideal patient. They, quite commonly, suggested such characteristics as: willingness to cooperate, being uncomplaining, not asking any questions, not being curious about the patient in the next bed, and so on. They tended to overlook the probability that a patient who met their qualifications, while he might not cause the nurses any trouble, would be deadly dull and a most unstimulating person. The young students who suggested these qualifications, obviously, had not yet learned to expect their patients to be interesting personalities. One of the satisfactions of a nurse is her opportunity to become acquainted with all sorts of persons. A recognition of the fact that each patient is unique, adds zest and interest to the nursing profession.

In order that the student nurse might be helped to develop an appreciation of some of the differences to be expected among her patients, a survey was made of the patients in one hospital on a single day.* An analysis was made of occupations, age and the nature of ailments or complaints. The purpose, in surveying occupations, was to suggest the great variation in voca-

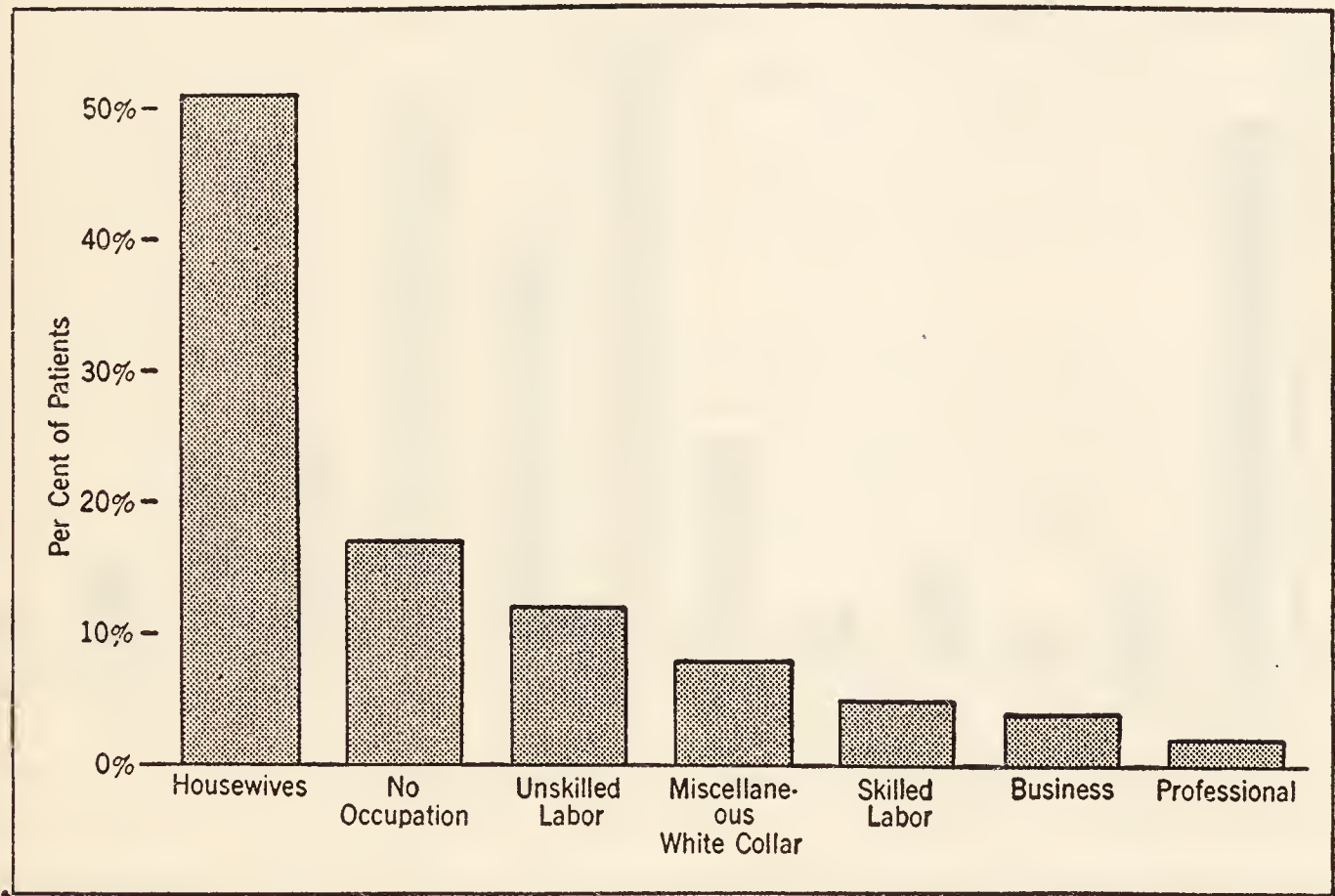


FIG. 5.—OCCUPATIONAL BACKGROUNDS OF PATIENTS IN A HOSPITAL ON ONE DAY.

tional and professional interests and backgrounds which is to be expected among the patients in a typical hospital group. Occupation, alone, does not tell us much about a person, but the analysis of a group suggests items of human interest which are not included in hospital records. Figure 5 is presented here for what it may be worth in calling attention to the uniqueness of each patient.

DIFFERENCES DUE TO AGE

Patients, of course, vary significantly in age. While age is not always an especially important factor to consider in an attempt to understand the adjustments of ill persons, children and aged patients often have some prob-

* Original data obtained through the cooperation of Mr. W. L. Benfer, Superintendent of Toledo Hospital and Miss Mabel Hyde, Medical Librarian in the same hospital.

lems which the nurse should know about. In the group studied, ages ranged from a few hours to 84 years. All age groups are represented. The distribution of ages is shown in Figure 6.

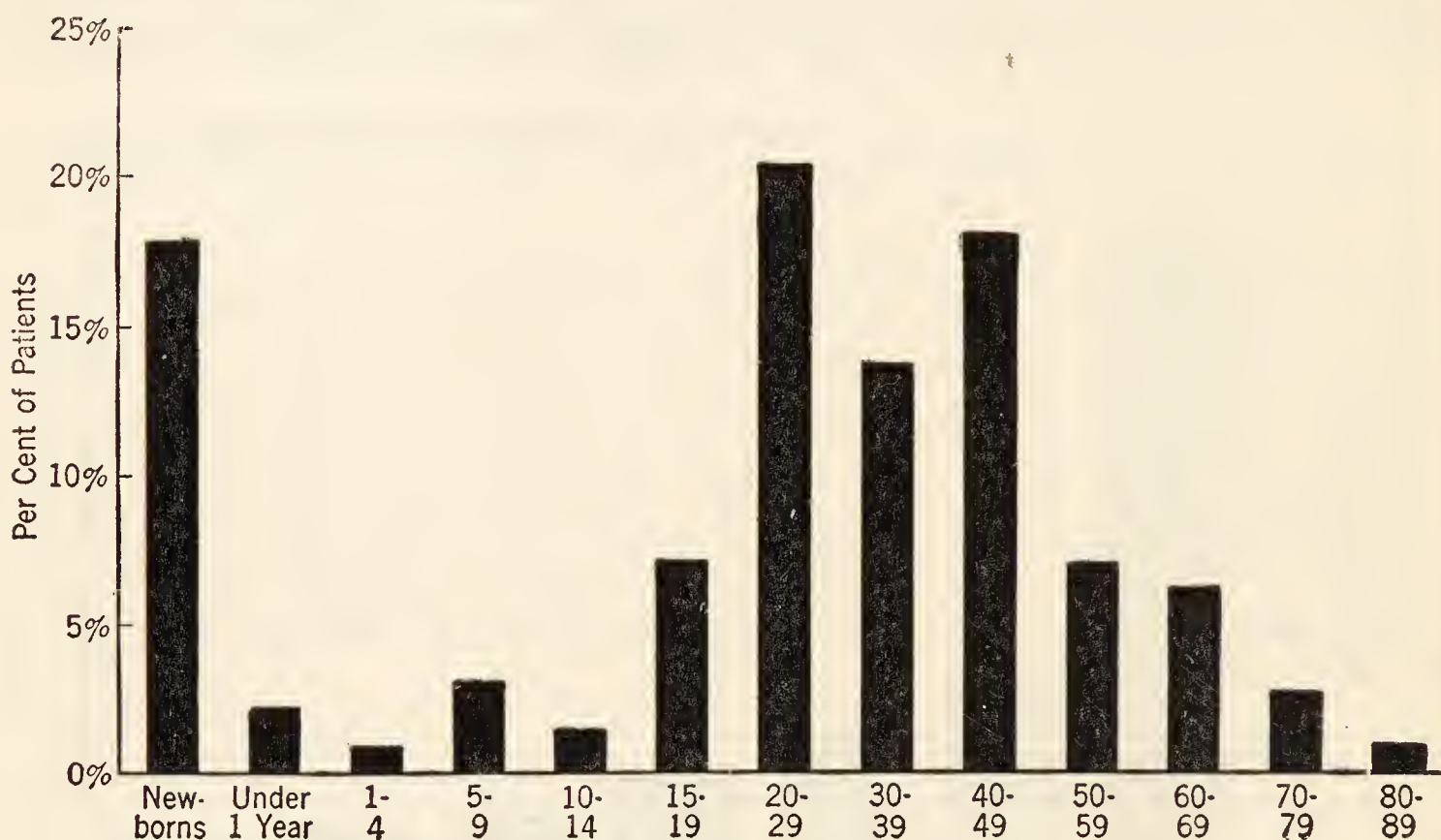


FIG. 6.—AGES OF PATIENTS IN A HOSPITAL ON ONE DAY.

Psychological Care of Children.—The nurse has an important role to play in adjusting any child to the hospital. Children do not enter the hospital of their own accord; they are taken there, and, sometimes, are left to face the unknown without the benefit of an understanding, adult guide. A tragic story of one child illustrates the plight of children who are thrust too suddenly into a new and fearful situation and are obliged to carry on alone. A five-year-old boy who was to have an operation on his foot was taken to the hospital by his mother, who put him into the elevator on the ground floor and left him, after telling the elevator operator where to let him off. When the child stepped from the elevator he was met by a nurse who, in spite of his protests, took him immediately to his bed and undressed him. An examination by the doctor was next in order. In telling about the examination, a nurse reported that it “took two nurses to hold the child down” while the doctor examined him.

Helping Children To Feel Secure.—Fortunately, most children do not enter the hospital so completely and literally alone and, just as fortunately, most children are treated more sympathetically and understandingly after they enter. Mothers usually accompany their children to the hospital and

stay with them until they have made their most difficult adjustments. In some situations, however, nurses are eager to have the mothers leave as soon as possible so as to have the "disagreeable business" of parting brought to a speedy conclusion.

At one time, many teachers, doctors and nurses believed that, if it was necessary for a child to be separated from his parents, it was best to lose no time in effecting the separation. Recently, in the light of studies of child adjustment, a different viewpoint is beginning to be accepted. There is, today, among specialists who work with children, a growing conviction that children should not be subjected to sudden and harsh changes. In the case of hospitalized children this means that the nurse must take over the mother's role as gently and gradually as possible.

Children in a new and strange situation often suffer from a sense of insecurity, due to the fact that their habits have been disrupted and they do not know what to expect. One reliable person in the new situation can often safeguard a child from needless anxiety and unhappiness. Children are accustomed to trusting their parents and if given a little encouragement will transfer their trust to the nurse.

Telling Children What to Expect.—It is imperative that a trustworthy nurse guide should be honest in telling the child what to expect. An extreme instance of what happens when children are deceived is illustrated in the true story of a three-year-old whose parents took her to the hospital for tonsillectomy, telling her that they were taking her to an ice-cream party. Because she anticipated something so different, the ether mask terrified the child. The story is told in more detail in a later chapter.

If the little girl had been told something about the anesthetic, she might have gone through the experience without violent emotional disturbance. In administering dressings and treatments, the nurse can often allay the fears of a child who has learned, through first hand experience, that the nurse is a dependable person. One little slip on the part of the nurse may destroy confidence that has been a long time in building.

Enlisting Cooperation.—The nurse who has accepted the role of trustworthy guide will also take time to enlist the child's voluntary cooperation as far as possible. A resourceful nurse discovers many ways of letting her child patient have a share in uncomfortable procedures. From the standpoint of time saving alone it usually pays to work with children and not against them. In the case of the boy who was restrained by the two nurses while the doctor made his examination, whatever time was saved was at a cost to the child which was vastly out of proportion to the saving.

Care of children is a specialized profession. All nurses take care of chil-

dren, but not all nurses recognize what it means to children and to the nurse herself when she voluntarily accepts the role of "Mother Pro Tem".

Psychological Care of the Aged.—Student nurses, as a rule, are interested in children and enjoy working with them; but they are not always enthusiastic about caring for very old persons. An aged man or woman is so far separated from youth in years, experience and in outlook on life that it is difficult for the young nurse to understand the old patient, yet there is no age group more in need of understanding care.

Health and Happiness in Old Age.—It is easier for anyone to be happy when well than it is when ill. The aged seem to find it especially hard to be happy when they are sick. The interests and activities of many old persons are very limited at best. When handicapped by illness, some aged men and women are not only restricted in their activities, but in things to think about. A relationship between health and happiness is suggested in a study of nearly four hundred men and women who were seventy years of age or older.¹ A comparison of the health scores of happy and unhappy old persons is shown in Figure 7. Some of the subjects lived in Manhattan and some lived in upstate New York. Each subject was given a *happiness* and a *health* rating. When similar groups were compared it was found that men and women whose health ratings were better than average were, in all groups, happier than those whose health was relatively poor.

Nurses sometimes pride themselves upon a bed-side manner which they believe to be particularly well suited to old persons. Sometimes, such specially adapted manners are anything but pleasing to patients. Often, the young nurse thoughtlessly reminds her patient that he is old. With the best of intentions, one student nurse addressed an eighty-year-old woman as "grandma", thereby ruining her chances to win the patient's whole-hearted cooperation. We have no reason to believe that a desire to be called by one's own name declines with advancing years, and so it is safe to assume that an elderly person, as well as a younger one, likes best to be addressed by name. Other forms of address may, to some patients, seem flippant and disrespectful.

On the other hand, there is nothing in psychological studies of the aged to indicate that a person of advanced years likes to be treated as if he were a child. Even though he may, in some instances, have reverted to what is known as *second childhood*, he is still essentially an adult and is often resentful of being treated as if he were an aged child. Elderly patients not unfrequently complain to their families that the nurse acts as if they did not know their own physical needs.

In planning the psychological care of an aged patient the nurse cannot

make a serious mistake in forgetting the patient's age as far as possible, especially in inter-personal relationships.

Elderly Patients Sometimes Feel Useless.—The desirability of disregarding age whenever possible does not imply that the psychological care of the aged is not specialized. Some old persons are unhappy because they feel that they are useless. This has been noted in various studies of the adjust-

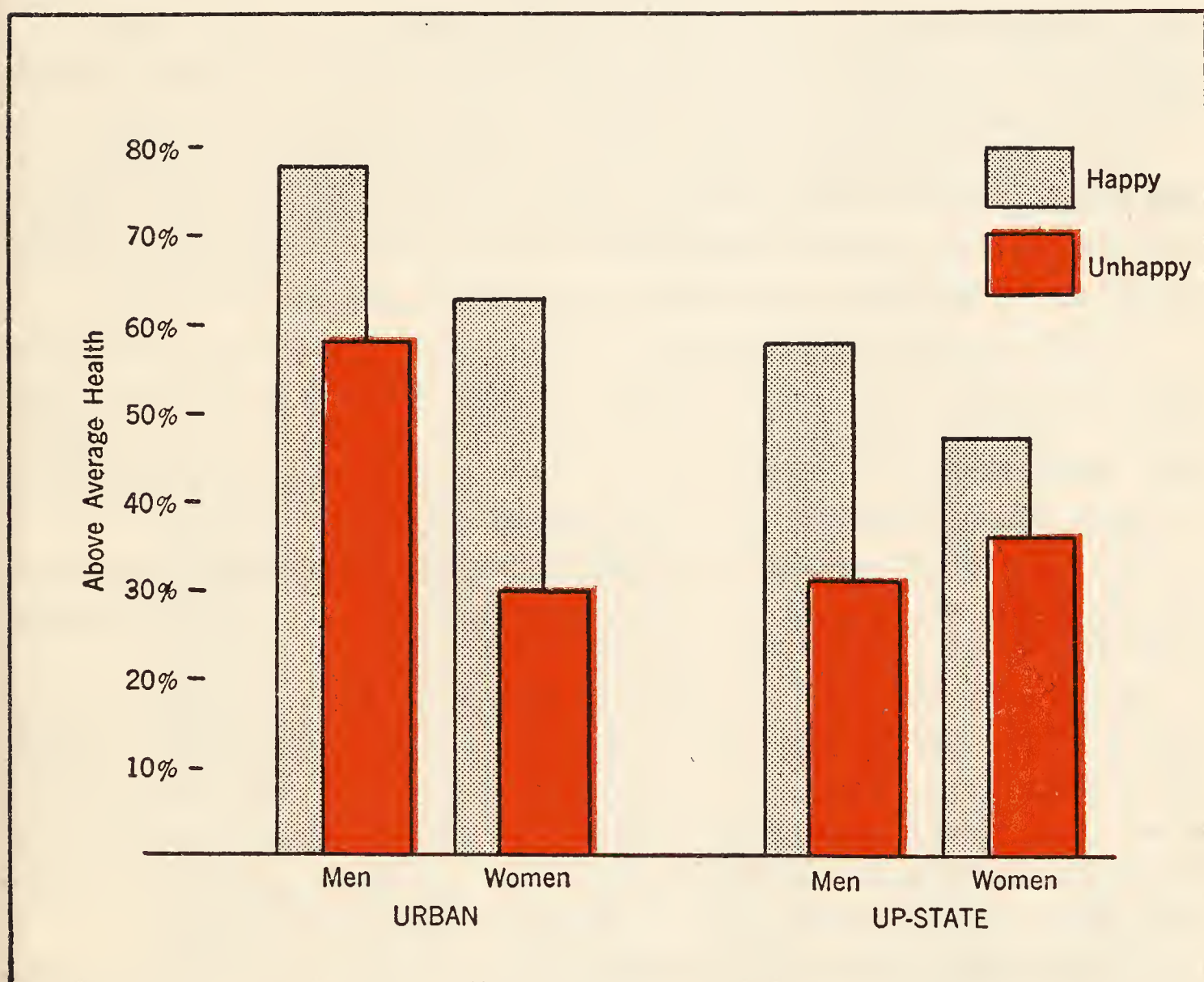


FIG. 7.—PERCENTAGES OF HAPPY AND UNHAPPY MEN AND WOMEN IN METROPOLITAN AND UPSTATE NEW YORK SCORING ABOVE AVERAGE ON HEALTH RATINGS.

(Adapted from Morgan, *Arch. Psychol.*, 1937, No. 214.)

ments of the aged. In some situations, a man who has been retired or a woman who is no longer managing her own household appears to suffer because of a feeling of inadequacy. Every normal person wants to be of use; a person who, because of age, is denied an opportunity to be useful, cannot be entirely happy. In a study of happiness in old age, about fifty aged men and women stated their views on factors contributing to happiness.² *Gainful occupation, useful activity, and satisfaction in doing things for others* were

listed among the first ten factors. A resourceful nurse can find many ways in which she can help her patient to feel useful; a less resourceful one can unwittingly contribute to a feeling of inadequacy.

Changes in Perception with Age.—With advancing age there is frequently a decline in acuteness of vision. Although not all old persons are greatly handicapped in this respect, there are so many who are visually limited that inability to see clearly should, no doubt, be considered in planning the psychological care of the very old patient. The nurse who is acquainted with procedures used by occupational therapists can often provide the patient with failing eye-sight with activities to occupy his attention.

In old age there is also a common loss of hearing ability. The problem of the partially deaf is discussed separately in a later section of this chapter, because there are certain adjustments to illness which are especially difficult in the case of the patient who cannot hear what is going on around him.

Studies of aged persons suggest that they tend to suffer more than those who are younger, from sudden changes in temperature. A recognition of this fact will perhaps help the student nurse to realize that an elderly patient who seems to her to be unreasonable in his demands, may really be having an experience which she, being young, cannot appreciate.

With increasing age there is also a lessening of the acuteness of the sense of taste. This, too, may be a factor which should be taken into account in providing for the psychological care of old patients.

Memory in Old Age.—A decline in immediate memory is often characteristic of the elderly. The nurse is sometimes disturbed because a patient will make a request, and after receiving attention, will make the same request again, almost immediately. Whether the need appears to be reasonable or not, the nurse should remind herself that a forgotten experience, to a person suffering from memory loss, is an experience that he has never had.

Contributions of The Aged.—Our discussion of the nursing care of very old patients has been one-sided, as if the nurse had everything to give and nothing to gain. As has so often been said, one of the greatest satisfactions in the nursing profession is contact with many kinds of persons. In taking advantage of her opportunities to broaden her interests and outlook, the student nurse will often find that very old persons can be both interesting and stimulating. In many instances they have grown tolerant of the misdeeds of others. They have lost some of the personal ambition which characterizes youth and in its place have very often substituted the satisfaction which comes from contributing to the happiness of their children and grandchildren. They are able to view social problems with a perspective that can be acquired only after long years of living.

Many older workers in industry prove themselves competent to assume responsibility and to work effectively.³ Men of genius like Edison and the master painter, Titian, have done some of their best creative work after the age of seventy.⁴

DIFFERENCES DUE TO THE NATURE OF THE DISORDER

To understand a patient's adjustment problems, something must be known about the nature of his disorder. Differences in the ailments or complaints of patients in the hospital group studied are shown in Figure 8. Not all types of disorders are indicated, but the analysis should serve to suggest that patients are far from being alike in their adjustment needs.

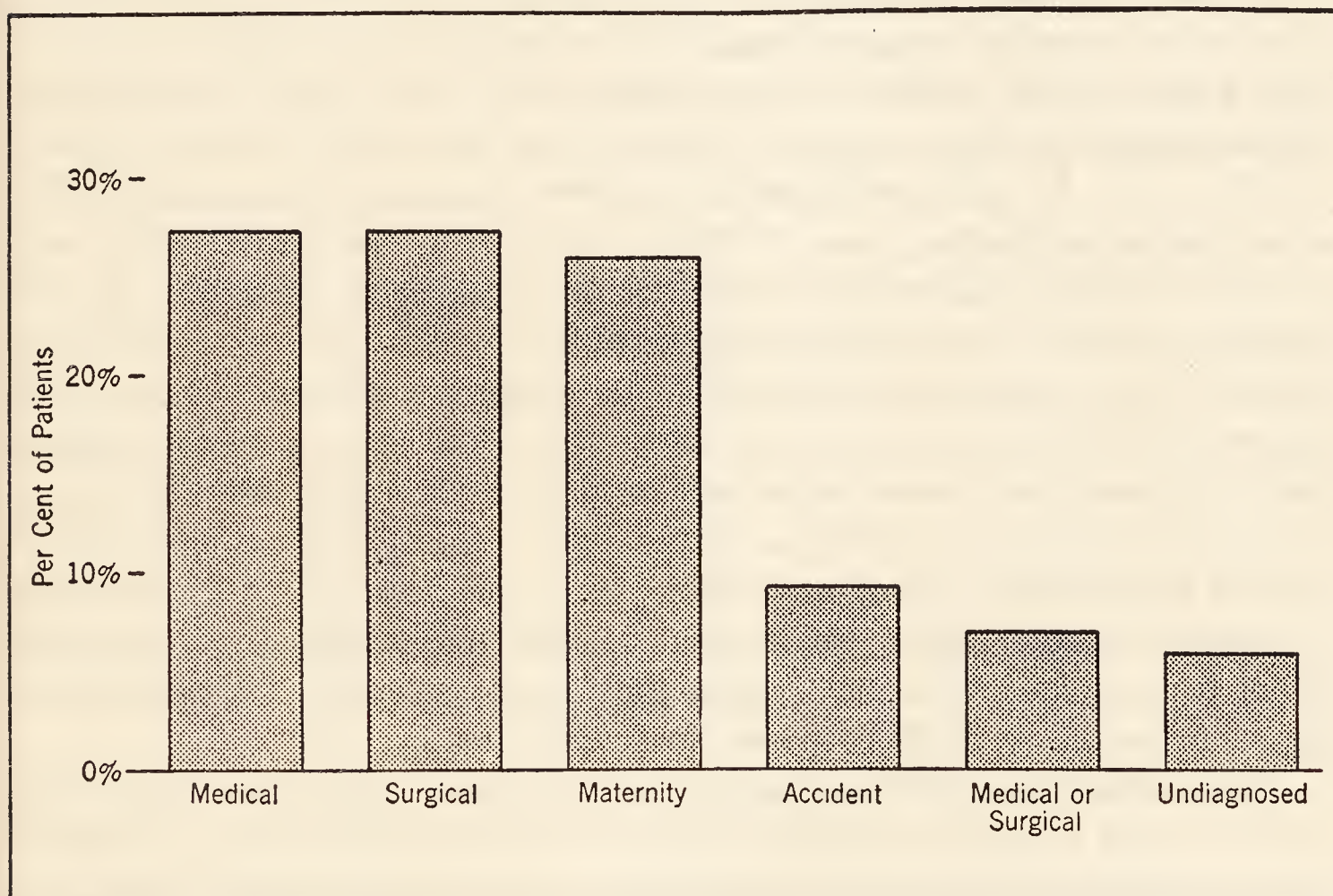


FIG. 8.—CAUSES OF HOSPITALIZATION OF PATIENTS IN ONE HOSPITAL.

A young woman who has just given birth to her first child has an outlook on her period of hospitalization which is far different from that of a grandmother who is being prepared for an operation. A patient suffering from a disorder that is diagnosed as *neurotic* may be more miserable than a surgical patient who is confident that he is being well cared for. Back of each entry of *accident* there is a sudden, harsh and disrupting experience

which must be considered in attempting to understand the patient's adjustment problems.

The Partially Deaf.—The nurse does not always find it easy to help a hard-of-hearing patient in his adjustment to illness, because it is difficult to establish a workable personal relationship. The deaf are often denied one of the greatest satisfactions in life, a warm, friendly, companionable relationship with other persons. It is not at all unlikely that some deaf persons are lonely, even when surrounded by those who regard them with affection. A deaf patient in the hospital who is surrounded by strangers, must often feel acutely alone.

One accompaniment of deafness in the case of an ill person who is also maladjusted is a tendency to be more or less suspicious. The activities of nurses and doctors may, to an uneasy patient who cannot hear what is said, be a threat of unknown dangers. The psychological care of a patient whose hearing is markedly impaired seems to be definitely specialized. The student nurse, in the course of her training, meets many men and women, who because of deafness or partial deafness, are in need of unusually understanding care. In one hospital school, student nurses who were assigned to a corridor in which there was an elderly woman who was almost deaf, were at their wits' end because they could not do anything to satisfy her. It was not easy to talk to the patient, because of her inability to hear unless they shouted. One student nurse decided to do something that would make the patient feel that she was especially interested in her. After considering what she might do, the student nurse concluded that she would tell the patient that she was going to give her an "extra nice" bath. After shouting this message in as agreeable a tone as possible, the nurse proceeded with the bath and proved to the forlorn woman that at least one person cared especially about her. As far as the one student nurse was concerned, the patient was appreciative and ready to cooperate from that time on.

The Neurotic.—Before she has been on floor duty many weeks the student nurse recognizes the fact that, in the case of all patients, emotional reactions may be significant in speeding or retarding recovery. Among the patients in any large hospital there are usually some whose illness is very seriously complicated by emotional reactions. Among such patients are those who are frequently designated as *neurotics*. A neurotic patient sometimes continues to be ill even though medical diagnosis shows no recognizable organic disorder. In a later chapter, we shall discuss neurotic adjustment briefly; at this point, however, the neurotic patient should be mentioned among patients who especially need to be nursed understandingly and sympathetically. His needs are somewhat unique.

Other Patients Needing Special Care.—Among the many other patients who should be mentioned here are the hopelessly ill, victims of accident, the crippled child, the person who becomes crippled in adult life, patients who are physically handicapped in other ways, and wounded service men and women who must be restored to normal functioning through medical and psychological therapy. A mention of even these few should suggest to the student nurse that psychology has much to contribute to her success in her profession.

PSYCHOLOGICAL CARE OF ALL PATIENTS

Regardless of differences in age, ailment, and in adjustment to illness, patients have much in common. Many patients must endure a certain amount of frustration, because of a sudden and often drastic change in their way of living. A certain amount of conflict of motive seems to be inevitable; most patients are motivated to get well but they are also motivated somewhat to carry on as they have been accustomed to carry on under conditions of health. Comfortable adjustment is not easy when motive conflicts.

Need to Change Habits.—Practically every person who shifts from the activities of normal living, to life as a hospitalized patient, must make changes in many of his habits. As a patient, he cannot, for example, be an executive. He cannot organize his own day and he has very little, if any, opportunity to show initiative and originality in planning his treatment. As the student nurse has already discovered, from first hand experience, habits are not changed over night. Many patients are entirely unaccustomed to being left alone for long periods of time; adjustment to isolation is in many instances difficult. Many patients are unaccustomed to being dependent; they find it hard to adjust at first to a way of living in which they are so largely dependent upon other persons. Most patients are unaccustomed to acute pain or other handicapping aspects of illness; adjustment often involves a decided reconstruction of habits.

Relief From Monotony.—Not many persons are in the habit of changing their habits and, for this reason, hospitalization may necessitate some difficult adjustments. Having made the change from home to hospital, however, patients sometimes find the monotony of hospital life hard to bear. Hospital experiences are often needlessly monotonous. The nurse can discover many ways in which she can relieve the boredom of the hospital day. Slight variations in routine procedures and treatments, innovations in diet, in the arrangement of flowers and even in the way that prescribed medication is administered may bring needed variety into the lives of patients. Ill

persons have fewer resources of their own upon which to fall back and so must look to the resourceful nurse for relief from intolerable monotony.

Need For Security.—Because there are so many new adjustments to be made and because the habits with which a person enters the hospital so often prove to be ill suited to life as a patient, many hospitalized persons appear to feel somewhat insecure. In a study of 100 cases, in a medical ward in a general hospital, it was estimated that 44 per cent were inadequately adjusted to the hospital routine.⁵ As we shall see in a later chapter, to feel secure, we must know what we want to do and must feel that we are capable of going ahead. The nurse has an important part to play in making patients feel secure, because it is through confidence in those who care for him that the patient's chief chance of security seems to rest.

SUMMARY

The student nurse learns precise technics. Nursing procedures are uniform but the patients are not.

Like the student nurse, each patient takes to the hospital everything which makes him unique as a person.

The psychological care of children in the hospital is highly specialized: the nurse can contribute to a child's feeling of security; she can tell children what to expect; she can try to enlist each child's cooperation. She can voluntarily accept the role of *Mother Pro Tem*.

The aged are in need of special nursing care: health and happiness are closely related in old age; a special bedside manner for the elderly is, apparently, not indicated; the aged often seem to feel inadequate; various perceptions change with advancing age; immediate memory sometimes declines. The aged often have a contribution to make to the young nurse.

The nature of a patient's disorder is an important factor in his adjustment to illness. Psychological care is specialized in the case of the partially deaf, the neurotic and patients suffering from innumerable other ailments.

Regardless of their many different needs, patients have certain needs in common: they need to make drastic revisions of their habits; they need relief from monotony; they need to feel secure.

THE TASK OF THE NURSE—A FORWARD LOOK

Every nurse wants to give to each patient the kind of care that he needs most. The psychological care of patients is of the utmost importance. In a course in psychology the student nurse cannot hope to learn all about human

nature or how to be psychologically sound in all aspects of her personal and professional life. A study of psychology should, however, give the student a start in the right direction, not only in her nursing activities, but in her understanding of her associates.

Through her first course in psychology she may anticipate a gradual growth in insight into human behavior. She may expect to learn something about: ways in which both sick and well persons differ and ways in which they are alike; common human needs and motives; how to motivate patients and others to cooperate; how to make other persons feel secure; how to contribute to a sense of personal worth; how to study and think more effectively; the nature of social learnings; common causes of emotional upsets; how to prevent and overcome fears and other disrupting emotions; the influence of emotional disturbance upon physical well being; common reactions to strain and frustration; psychological factors influencing recovery; the meaning of personality; and the role of the nurse as a morale builder.

SUGGESTED ACTIVITIES

1. **Discussion.** What might you do to stimulate yourself to become interested in a patient whom you may regard as "most uninspiring"?

2. **Study and discussion of children.** Elect several students to make studies of child patients and to report back to the class, in such a way that each child will stand out as a distinct personality. A suggestive plan of study follows.

(1) *Emotional reactions*

General mood—happy, stable, discontented, excitable, apprehensive, irritable? other reactions.

Expressions of affection—To whom? Under what circumstances?

Expressions of satisfaction—Under what circumstances?

Evidences of fearfulness—Under what conditions?

Indications of jealousy—Under what conditions?

Temper outbursts—Under what provocation?

(2) *Attitudes toward adults*

Most common reaction—cooperative, friendly, craving attention, independent, dependent, sensitive to approval or disapproval, negativistic, willing, others.

(3) *Family relationships*

What persons constitute his family? What is his mother's most common attitude toward the child? What are some significant attitudes of other members of his family?

3. **Discussion.** What are some family situations which sometimes make it difficult for a patient to adjust to the hospital?

4. **Interviews.** Consult with members of the staff who have had wide experience in nursing. Ask for illustrations of excellent adjustment to hospitalization. Compare notes in class.

5. **Discussion.** What are some of the ways in which a patient may evidence insecurity?

6. **Notebook suggestion.** Enter in your notebook, from time to time, comments about how certain patients have reacted to you, either favorably or otherwise. Tell enough about the circumstances so that you may go back to the entry at some later time to check yourself for growing insight into desirable nurse-patient relationships.

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Solomon, J. C. "Psychiatric Implications of Deafness," *Ment. Hyg.*, N. Y., 1943, 27, 439-445.

Institutions and agencies distributing child care pamphlets at small cost or free of charge:

Child Study Association of America, 221 West 57th St., New York, N. Y.

Children's Bureau, U. S. Department of Labor, Sup't. of Documents, Washington, D. C.

Cornell University, Ithaca, N. Y. (Cornell Bulletins for Homemakers).

Iowa State College, Extension Service, Ames, Iowa.

Kansas State College Bulletins, Div. of Home Economics, Manhattan, Kansas.

National Assn. for Nursery Education, Distribution Center, W. 514 East Hall, University of Iowa, Iowa City, Iowa.

National Committee for Mental Hygiene, 1790 Broadway, New York, N. Y.

National Congress of Parents and Teachers, 600 So. Michigan Blvd., Chicago, Illinois.

National Youth Administration of Illinois, Merchandise Mart, Chicago, Illinois.

Agricultural Extension Service, Ohio State University, Columbus, Ohio.
Oklahoma A & M College, Extension Service, Stillwater, Oklahoma.
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⁴ COWDRY, E. V. "We Grow Old," *Sci. Mo.*, 1940, 50, 51-58.
⁵ DAVIDOFF, E., REIFENSTEIN, E. C., and GOODSTONE, G. L. "Personality and Habitus in Organic Disease," *Psychiat. Quart.*, 1941, 15, 544-553.

STIMULUS WORDS AND COMMON RESPONSES *

(For use in connection with Chapter I.)

Stimulus Words	Common Replies	Stimulus Words	Common Replies	Stimulus Words	Common Replies
table	chair	high	low	city	town
dark	light, night	sour	sweet	square	round
man	woman	trouble	sorrow	butter	bread
soft	hard	cabbage	vegetable	doctor	physician
mutton	meat, sheep	eagle	bird	loud	noise
hand	foot	stem	flower	thief	steal
short	long	lamp	light	joy	happiness
butterfly	insect	dream	sleep	bed	sleep
smooth	rough	Bible	book	tobacco	smoke
command	obey	swift	fast	baby	child
slow	fast	blue	sky	moon	light
citizen	man	long	short	scissors	cut
spider	insect	whiskey	drink	green	color
red	color	bitter	sweet	king	queen
sleep	rest	thirsty	water, dry, drink	blossom	flower

* Words are selected from a list prepared by G. H. Kent and A. J. Rosanoff. Use of the list is discussed in their *Manual of Psychiatry* published by John Wiley and Sons, Inc., 1920. It may be interesting to compare responses made a quarter of a century ago. with responses made today.

Chapter IV

WHY WE DIFFER

In the preceding chapter we observed that patients are unlike in many respects. Student nurses, too, vary greatly in their personal characteristics, even though they do have many interests in common and share a common professional goal.

It is obvious that no two persons can be alike; we cannot have even a few social contacts without being impressed by the uniqueness of each personality. We recognize differences, but we are prone to think in terms of extremes; a person either possesses a certain trait or he lacks it. In judging personality characteristics, we often find ourselves classifying according to this *black vs. white* scheme of thinking: one person is, for example, intelligent while another is stupid; one is stable emotionally, another is unstable; one adheres to social and political beliefs that are right, another subscribes to wrong beliefs.

HOW WE DIFFER

All human traits that have been measured tend to be distributed according to the curve of normal distribution, or, as it is sometimes called, the *normal probability* curve. The student is, no doubt, familiar with graphic il-



FIG. 9.—BIRDS IN FLIGHT.

(From Leta S. Hollingworth, *Psychology of Subnormal Children*. By permission of The Macmillan Company, publishers.)

lustrations of such a curve. For a dynamic demonstration of what such a distribution of traits means, it has been suggested that we observe a large flock of birds in a long flight. We can usually see that the largest group of birds, near the middle of the flock, seems to be flying at about the same

rate. A few are far ahead of the middle group and a few lag far behind. Back of the leaders, and ahead of the stragglers, are a few more birds. Nearer the middle group, among both the speedier and the slower birds, are still more. We can observe that the nearer a bird is to the center of the flock the more birds there are that are flying at about his rate. (See Figure 9.) Another interesting observation is possible: the few that are far advanced

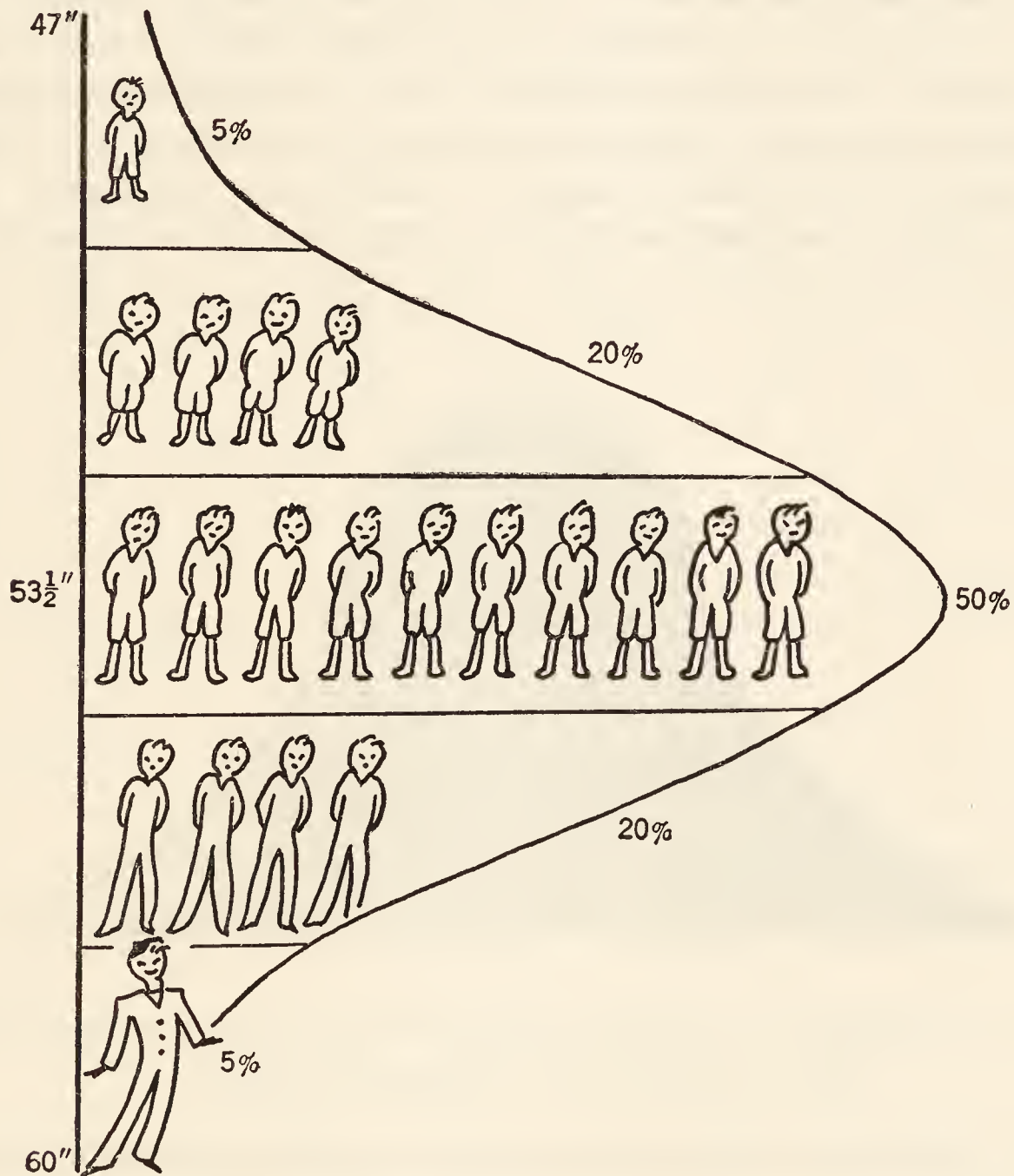


FIG. 10.—SCHEMATIC PRESENTATION OF HEIGHTS OF TEN YEAR OLD BOYS.

appear to be balanced by a corresponding few that are far behind; the slightly advanced are balanced by about the same number that are slightly retarded, and so on. The difference between the flying rates of birds in the flock is marked only in the case of the extremely swift and the extremely slow. Others, in between, seem to grade very gradually from relatively speedy to relatively slow.

For a further illustration of the gradual gradation which is characteristic

of a normal distribution of measurable traits, we might consider the stature of ten-year-old boys. This is illustrated schematically in Figure 10. We can easily note that boys of a given age cannot be classified as *tall* or *short* or even as *tall*, *average* and *short*. Tall boys range all the way from just above average to extremely tall, and short boys vary similarly. Extremely short and extremely tall boys are rare.

All human traits are of interest to the student nurse. It is significant that personal traits are not distributed on an all-or-none basis, but that variations tend to follow the normal curve. If we think of excessive development of a desirable trait as *white* and an extreme lack of that same trait as *black*, we must consider all intermediate degrees of development in terms of various shades of gray, as suggested in Figure 11. Differences in readiness to learn,

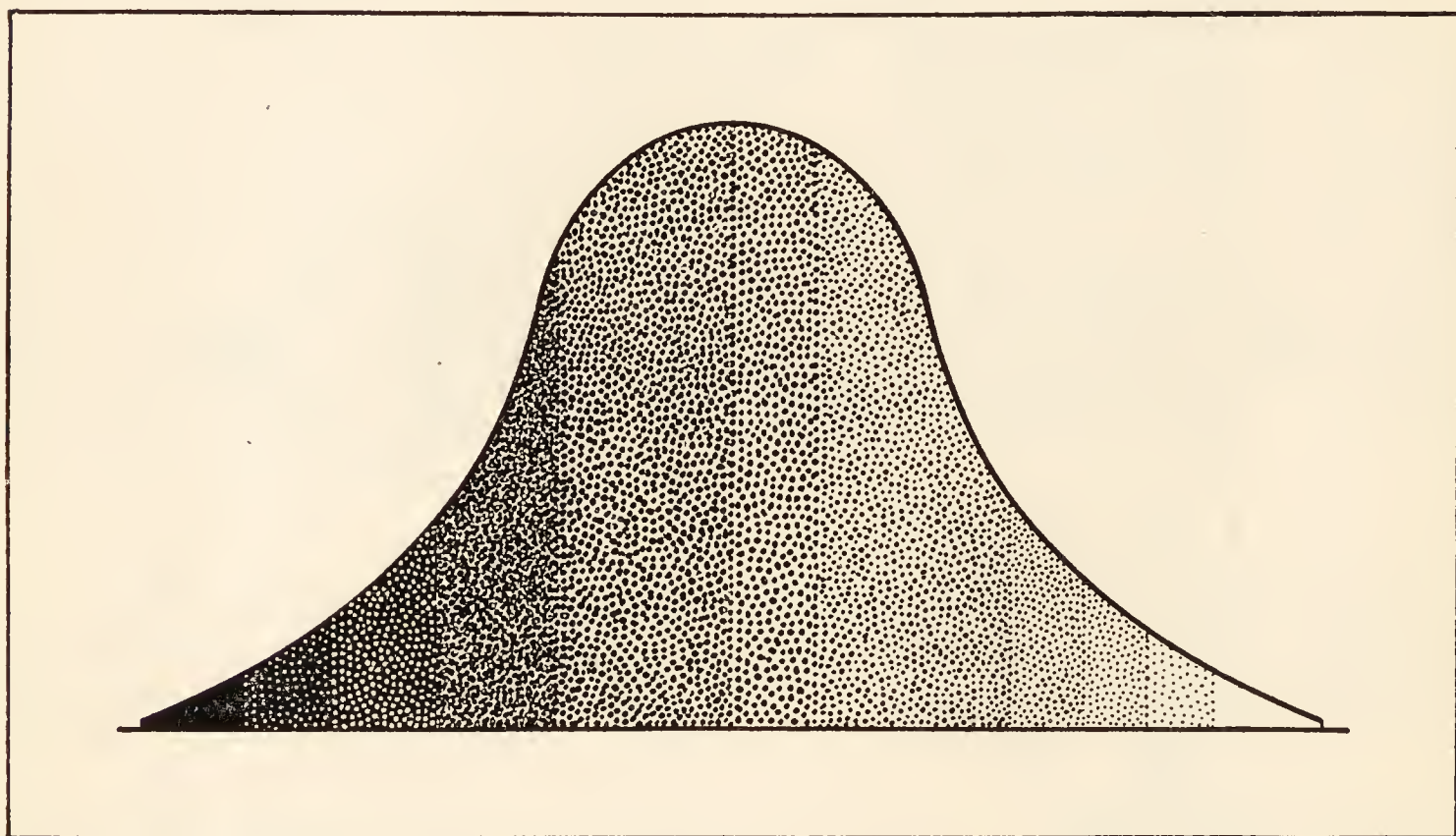


FIG. 11.—GRADATION OF MEASURABLE TRAITS.

in ability to adapt to frustrating situations, in reasonableness of belief, in social adjustment and in every other characteristically human trait appear to be shaded from white to black through innumerable gradations of near-white, light gray, medium gray, dark gray and near-black.

How can we account for this diversity in traits? The question is often answered in vague and general terms by stating that individual variations are due to differences in heredity and in environment. Before we can even begin to understand individual differences, however, we shall need to clarify our thinking about the nature of inheritance, of environment, and of the interaction of hereditary and environmental factors.

There are many reasons why the student nurse should know something about researches in the field of heredity. On the personal side, a knowledge of heredity is unquestionably of practical value. As a professional person, the nurse is sometimes consulted about various problems pertaining to heredity, especially in reference to prenatal influences and the inheritance of defects. Because the graduate nurse has a much better background of science than the average person, she is expected to dispense something better than arm-chair opinions when consulted on such matters.

The student nurse, even during the earlier period of her training is occasionally called upon to answer questions concerning prenatal influences. An expectant mother is sometimes worried and fearful lest her baby will be handicapped because of some emotional experience which she has had during the period of pregnancy. Others may be troubled because they believe that bodily injury sustained by the mother in a fall or in some other accident can produce a corresponding injury in the child. There are many old wives' tales about prenatal influences which have been handed down from generation to generation and which are still accepted uncritically by many persons. The nurse needs to have something more reliable to fall back upon than the superstitions of her ancestors. A few facts about the nature of heredity in general will allay many needless worries about prenatal influences and the inheritance of certain defects.

Much of the material upon which theories of human heredity are based has developed from laboratory studies of lower forms of life. To *prove* the inheritance of certain characteristics in human life is, in many instances, impossible, because a direct study of the inheritance of a trait necessitates a highly organized and carefully controlled study of many generations, under experimental conditions. Conclusions about the inheritance of specific traits are, therefore, to be regarded as tentative, subject to confirmation or contradiction. However, in detailed, patient and prolonged studies of heredity in lower forms of life, certain common processes have been observed and general *trends* have been noted. A theory of heredity in general has evolved by way of such studies.

Theories regarding the inheritance of human traits are based also upon circumstantial evidence. A principle governing inheritance on a lower level having been discovered, it has been possible to check the *probable* soundness of the principle as it seems to operate in human life.

How Life Begins.—An egg, which is about the size of a period on a printed page, is fertilized by a sperm which is very much smaller, and some one person's maximum supply of hereditary traits is determined. Within each nucleus (the sperm and the egg), there are twenty-four minute bodies called

chromosomes. These chromosomes are made up of genes, the smallest known units of life. In these genes are contained every potential characteristic which an individual can inherit. The hereditary process is illustrated in Figure 12.

In the twenty-four chromosomes which the father contributes to the offspring are one-half of the chromosomes which he, the father, received from his parents and more remote ancestors. The twenty-four chromosomes which the mother contributes constitute half of the chromosomes with which she started life. The child-to-be will presumably, one day, pass on to his offspring one-half of the forty-eight chromosomes which he receives. It can be seen that we inherit not only from our parents but from our more remote ancestors as well.

In receiving one-half of our chromosomes from each side of the family we do not, however, receive one-half of our *characteristics* from each. While each parent contributes one-half of the chromosomes which he or she has inherited, science cannot tell us which twenty-four of the forty-eight chromosomes are to be passed on.

The precise nature of a gene and the way in which it produces its distinctive effect have not been demonstrated. Some students of heredity believe that a gene is a molecule, while others think that its nature and action are chemical.¹ Genes are as nearly permanent as any body can be. They are the most stable of all living units, but they do occasionally change through mutation.² For practical purposes, however, in attempting to understand hereditary characteristics, we can safely conclude that genes constitute our permanent units of heredity and that, in all probability, each person can expect that the genes which he contributes to the next in line will be the same genes which he himself has received from his ancestors by way of his parents.

Germ Cells and Body Cells.—The single cell which is formed when the egg and the sperm unite divides and sub-divides many times. Some of the cells resulting from the division become *body cells*. These will, in time, have differentiated functions, although in every cell, regardless of how different its functions, there is believed to be an exact replica of the original chromosomes and genes. Some of the cells become *germ cells* from which a sperm or egg will, some day, help to start a new individual on his way. These germ cells carry everything that has been received as an inherited characteristic, and in these minute cells are carried all characteristics which can be passed on.

Germ cells and body cells cannot interact. Anything that happens to body cells, in the course of development, can have no permanent influence upon the cells which carry hereditary traits. When this knowledge is grasped, an

EVERY MAN and EVERY WOMAN

At conception received
24 Chromosomes from each parent
or 48 in all

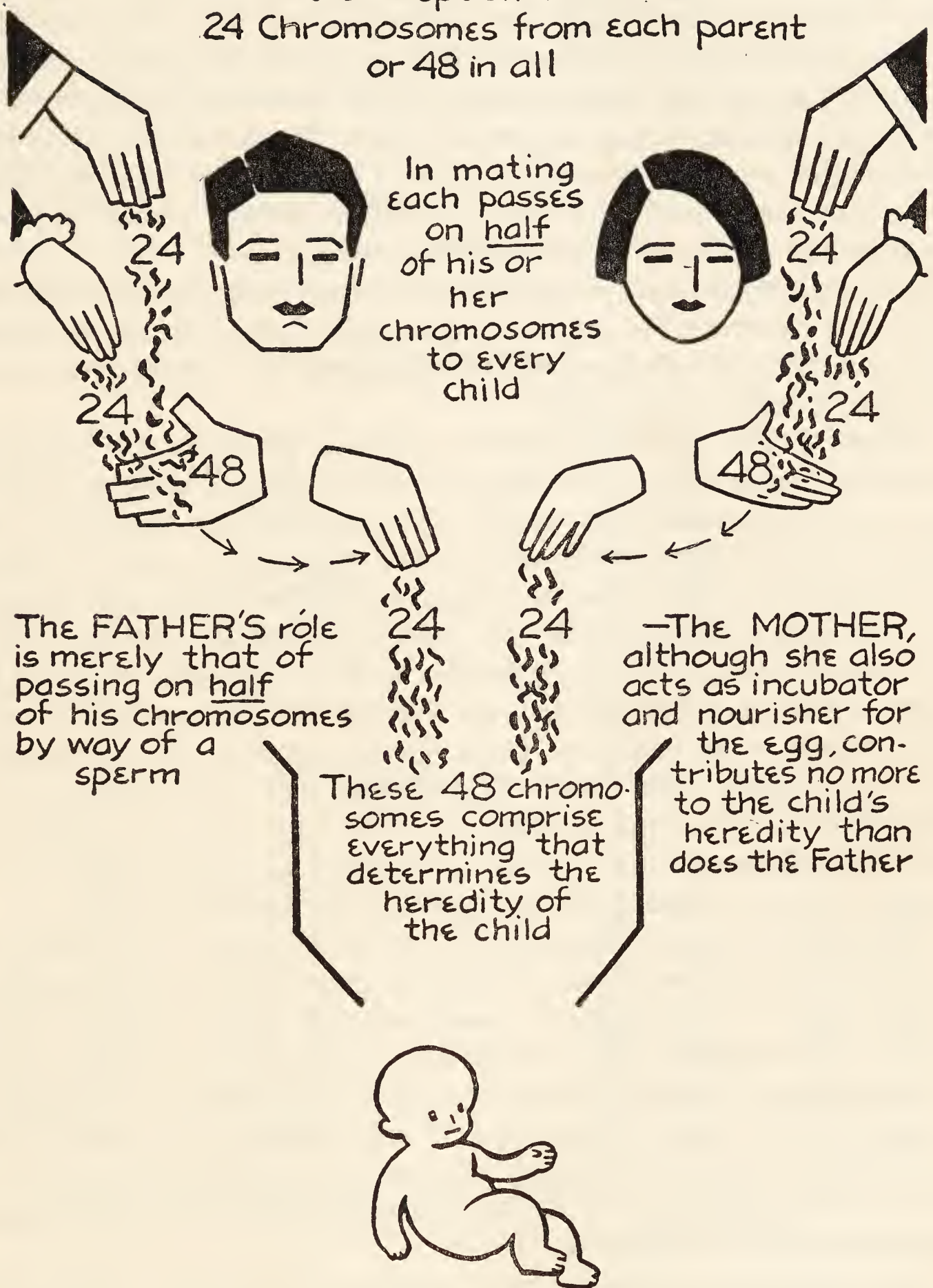


FIG. 12.—THE HEREDITARY PROCESS.

(From *You and Heredity*, Copyright, 1939, by Amram Scheinfeld, published by J. B. Lippincott Co., Philadelphia.)

answer to many questions concerning so-called prenatal influences is immediately found. Whatever influences the mother as a *food giver* influences the development of the child, but cannot influence the germ cells which have constituted the child's heredity. Even as a food giver, the mother does not have direct contact with the unborn child. There is a wall between the mother and the child during the prenatal period. The mother's blood, as such, never reaches the child, because the fetus is nourished by a process that is known as osmosis; food substances are strained out and absorbed in much the same way that moisture is absorbed by a blotter.

It is believed by some geneticists that certain drugs, fumes and disease germs can penetrate the protective wall which surrounds the developing child; but that such influences, while handicapping fetal development, cannot permanently influence germ cells.²

What Traits Are Hereditary?—Although studies of the inheritance of specific human traits are limited in number, there is fairly good agreement among geneticists that certain traits are primarily hereditary.¹ Permanent physical characteristics which make each person unique in appearance are dependent upon heredity. Among such characteristics may be listed: sex, color of eyes, hair and skin; the form and distribution of hair; bodily structure and form, including the hands and feet; and finger, palm and sole patterns. Blood types, glandular types and the chemical composition of the blood appear to be hereditary traits. Certain characteristic variations of the nervous system are believed to be due to heredity; among such traits the efficiency of the senses and the efficiency of the brain may be included. Constitutional differences such as vigor or weakness and susceptibility or immunity to various diseases are often listed among hereditary traits.

Recessive Traits.—Characteristics which cause the most concern are very often believed to be due to recessive genes. Some feeble-mindedness, certain forms of insanity and a susceptibility to certain diseases, such as diabetes, are frequently listed among traits which can be inherited through a combination of recessive genes. According to this theory of inheritance, a recessive trait cannot be passed on if it is present in the genes of only one parent. It must be carried by both parents; moreover, the genes carrying the trait must be paired. Figure 13 illustrates the way in which feeble-mindedness might be inherited.

Each parent has received a gene, (actually many genes), which makes feeble-mindedness possible, but neither parent is feeble-minded because recessive genes, in each instance, have been paired with normal genes. The children of parents, both of whom carry defective genes, may or may not be feeble-minded, depending upon a chance allocation of genes making de-

fective mentality possible. In the illustration, Child A has no defective gene; B and C each received one, but in each case it paired with a normal gene; D received one such gene, (actually many), from each parent and they paired in such a way as to pass on to D the trait of feeble-mindedness.

The Inheritance of Mental Defects.—Some persons appear to profit from experience much more readily than do others. Some seem to be “slow to learn” while others appear to learn with unusual facility. Some seem to blunder through life, making the same mistakes over and over, apparently because they are not able to see relationships as well as the average person does. There are some who exercise notoriously poor judgment in planning,

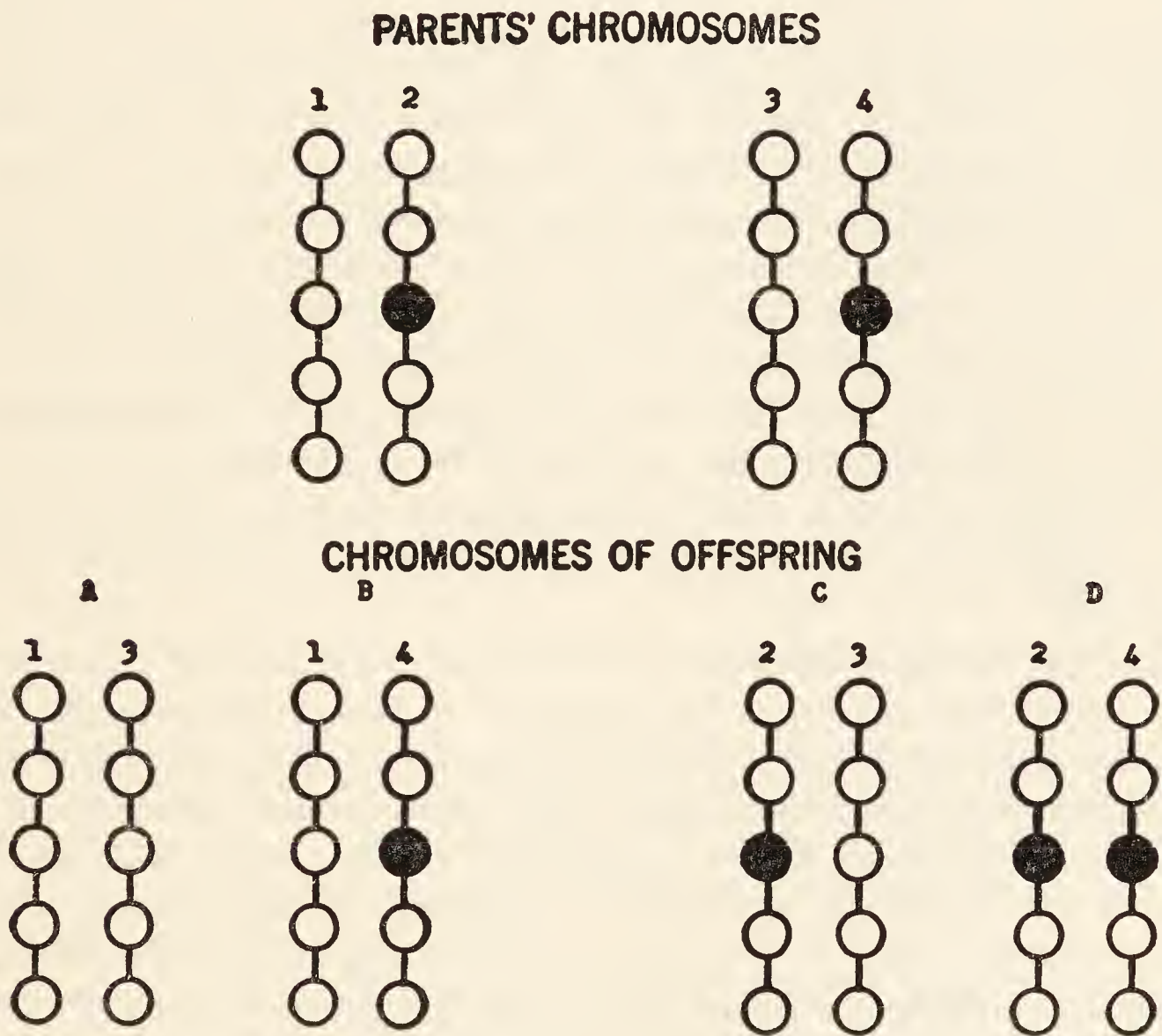


FIG. 13.—FIGURE SUGGESTING INHERITANCE DUE TO RECESSIVE TRAITS.

(From Cruze, W. W., *Educational Psychology*, The Ronald Press Co., New York.)

possibly because they do not know how to make good use of previous experience in making plans. Some are more astute than others in grasping meanings. There are some who get along fairly well as long as they can deal primarily with the concrete, and are not called upon to make generalizations or to deal with abstractions.

Feeble-mindedness.—Among those who are most incompetent in their intellectual reactions are the feeble-minded or *mental defectives*, persons who are retarded in their mental development. They function, throughout life, on a much lower intellectual level than the average person; they fall short of normal expectations, socially and economically. Histories of many feeble-minded persons suggest that they have been retarded from birth. A feeble-minded child is often slow in learning to walk and to talk. In his school experiences he is not, as a rule, able to advance beyond the early grades.

Some persons appear to be incurably incompetent. Mental inadequacy is recognized in law. As far back as 1534, the laws of England made provision for those who were “sots and idiots from birth”.* “And he who shall be said to be a sot and idiot from his birth, is such a person who cannot account or number twenty-pence, nor tell who was his father or mother, nor how old he is, etc., so as it may appear that he hath no understanding of reason what shall be for his profit, nor what for his loss. But if he hath such understanding, that he know and understand his letters, and do read by teaching . . . , then it seemeth he is not a sot nor a natural idiot.”

We can, of course, suspect a person of being feeble-minded, but we cannot classify him as such until we have given him an intelligence test. If, in addition to behaving, throughout life, as a person who is far less competent than the average in looking out for himself, he should have an *intelligence quotient* of 70 or less, he could be designated as feeble-minded. An intelligence quotient is an *estimated rate of mental growth*, based upon a mental test rating.

Levels of Feeble-mindedness.—At the upper limits of feeble-mindedness, is the person who appears to be growing or to have grown mentally, at a maximum rate of seven-tenths of a year for each year of age. Growth in mental capacity, presumably, stops before adult years, in many instances; in the case of a feeble-minded person, it, presumably, stops earlier. A person who grows at a very slow rate should not be expected to reach a stage of mental development equivalent to that of the average person, at any time. The maximum mental capacity of a person who has an IQ of 70 (growth rate .7), would supposedly be about equal to that of a child of ten or eleven years of age. A person with an IQ between 50 and 70 is designated a *moron* and is regarded as a higher level type of feeble-minded person. An *imbecile* is a person whose intelligence quotient is between 25 and 50, that is to say, a person who grows mentally at the rate of one-fourth to one-half year for each chronological year of growth. The imbecile cannot be expected to attain a

* Quoted by R. Pintner in *Intelligence Testing*, New York: Henry Holt and Company, 1923, p. 6. Quoted by permission of publisher.

mental development superior to that of a child of seven or eight. An *idiot*, a very low-level, feeble-minded person, has an intelligence quotient of 25 or less. He is a person whose mental growth rate is, at the most, one-fourth of a year for every year of age. The idiot is not expected to develop beyond the capacity of the average child of three or four.

Is All Feeble-mindedness Inherited?—Some cases of feeble-mindedness are believed to be due to hereditary factors, and some are believed to be due to non-germinal factors such as pre-natal environment, birth injuries or later accidents or infections. The percentage of cases of feeble-mindedness that can probably be attributed to heredity has been variously estimated, but all students of heredity agree that some forms of feeble-mindedness are inherited.^{3, 4, 5}

Circumstantial Evidence of The Inheritance of Feeble-mindedness.—Inferior mental development seems to “run in families”. It is hard to separate hereditary and environmental factors under the best conditions; in studying feeble-mindedness in families, it is particularly difficult because feeble-minded children often have mentally retarded parents who are incapable of providing for their children an environment in which they might grow normally. To study the possible inheritance of feeble-mindedness, it is necessary to rule out environmental factors, as far as possible. One way of doing this is to compare feeble-minded identical twins, who are more alike in heredity than any other related pair, with their brothers and sisters, (siblings). If large numbers of retarded, identical twins are more alike in intelligence than their siblings, who have the same kind of environment as the twins, it is reasonable to conclude that they owe their retardation, partially at least, to hereditary factors.

In one such study more than 350 mentally deficient persons who were known to have twin brothers or sisters were included.⁶ Some of these feeble-minded persons, 126, had *identical* (one egg and one sperm), twins and the others had *fraternal* (two eggs and two sperm), twins. Many also had other siblings (brothers and sisters).

Among the 126 identical twins of the feeble-minded subjects, 89 per cent were also feeble-minded. Among the fraternal twins of the subjects studied, 61 per cent of twins of like sex and 47 per cent of those of unlike sex were also feeble-minded. Of the siblings, only 16 per cent were mentally deficient. The most closely related siblings resembled feeble-minded subjects most.

The study, suggests that feeble-mindedness can be inherited. If mental retardation were due primarily to environmental factors, we should expect identical twins to be no more alike in intelligence than any other siblings. Of course, there is the possibility that non-germinal factors might account

for some of the similarity between identical twins, since they have the same prenatal environment and are subject to the same birth hazards. Because twins share so many experiences, environmental factors cannot be ruled out altogether. The study illustrates the difficulties that are encountered in attempting to separate hereditary and environmental factors. It does, however, *suggest* the inheritance of feeble-mindedness.

Heredity, obviously, does not account for all instances of feeble-mindedness. Later on, we shall consider *prenatal* influences in relation to mental defects. A small per cent of feeble-mindedness is apparently due to birth injuries. In one institution for the feeble-minded it was estimated that from 6 to 10 per cent of inmates were feeble-minded because of brain injury suffered at birth.⁴ In other instances mental defect is to be traced to later injury or disease.

THE NATURE OF ENVIRONMENT

Many of the variations in behavior which are to be noted in even small groups are, apparently, based upon differences in hereditary endowment. In our brief survey of the nature of heredity, environmental influences have been disregarded as far as possible. This separation of heredity and environment is, of course, arbitrary and for the purpose of clarifying thinking in regard to the nature of both hereditary and environmental influences. Obviously, many variations in behavior are due, *primarily*, to differences in environmental background.

Geographical or Physical Environments.—The nature of environment, as a rule, is not understood by the beginning student of psychology, who commonly thinks of environment in terms of physical surroundings. A person who lives in a poor neighborhood, in which there are many rooming houses, pool rooms, dance halls and saloons is said to have a poor environment. On the other hand, one who lives in a selected residential district is said to have a good environment. It is true that differences in physical surroundings may account for some variations in behavior, but the physical or *geographical* environment in which a person lives is only one of many environments which influence his reactions.

Social and Cultural Environments.—Differences in *social and cultural* environments are also more or less obvious. Some variations in behavior may be attributed, for instance, to differences in opportunity to enjoy good books and magazines, to travel, to meet interesting people and to plan for a varied use of leisure. Not all "good" homes provide a desirable social and cultural environment, however; and not all "poor" homes fail to

make such provision. Good books sometimes line the shelves, radios and musical instruments make good music possible, interesting social contacts may be had for the asking,—but opportunities for social and cultural growth are not used fully.

Environments of Custom, Belief and Tradition.—Apparently, environment cannot be judged in terms of such tangible things as houses, libraries, and various means of travel, or in terms of opportunity; we must take into consideration the people who constitute various environments and their customs, beliefs and traditions. In every community there are characteristic mores to which all socially acceptable persons must subscribe. There are restrictions and taboos which limit the activities of growing children and socially minded adults. The traditions which constitute a part of everyone's social heritage cannot be disregarded if we are to understand variations in environment. Environments of *customs, beliefs and traditions* vary widely. In a single group of student nurses, differences in beliefs and practices due to differences in background of traditions, can usually be noted.

Inter-Personal Environments.—Even more important to the development of any one person, than his physical, social and cultural or traditional environment are his psychological surroundings. Here we find all the persons with whom he is in close contact. He is influenced by their beliefs, their attitudes toward him, and their attitudes toward themselves and their neighbors. This is the one aspect of environment which is most often overlooked. *Inter-personal relationships* are not dependent upon physical surroundings, cultural opportunities or the traditional customs into which a person may be born, although they are, of course, influenced by such factors.

There is one other environment which must be considered in attempting to explain why people vary among themselves as much as they do. The environment to which a child is subjected *before birth* is sometimes significant in explaining why he is in some way unlike most of his associates. Other environmental influences are discussed at various times in the text and, for this reason need not be elaborated here; prenatal environment can profitably be considered at this point. There are many characteristics which can probably be attributed to factors which operate before birth. For illustrative purposes, the possible influence of prenatal environment upon intelligence is selected.

Prenatal Environment.—Conditions, prior to birth, which deprive the growing organism of necessary nourishment, which subject it to acute infections or disturb its chemical balance, may result in *congenital* but not *hereditary* feeble-mindedness. For example, in a group of 100 persons rated defective in mental development, from one to five apparently owed their

feeble-mindedness to congenital lues (syphilis).⁷ In such cases, the defect cannot be regarded as hereditary because it is due to conditions arising after the union of the two cells from which the child originates. The infection is transmitted to the child during the prenatal period, and it is because the infection has damaged the brain that the child cannot develop normally.

Cretinism.—One type of feeble-mindedness which is presumably due, in some instances, to prenatal environment, is that associated with a condition known as *cretinism*. A cretin is a person who, because of a marked deficiency of thyroid, has not developed normally, either mentally or physically. Such persons are stunted and sometimes somewhat deformed, physically, and, unless discovered at an early age, and treated for thyroid deficiency, may not develop far beyond the idiot level of feeble-mindedness. Pictures of a child who shows many of the characteristics of cretinism are to be seen in Figure 14. It is to be noted that her stem-length is relatively short, that her arms and legs are stubby and that she has a very short neck. Her appearance, on the whole, is somewhat *compressed*, as if pressure has been brought to bear to keep her from growing in height and in the length of her limbs. This particular child rated below normal on an intelligence test, even after she had been treated with thyroxin, or thyroid gland secretion. Subnormal mentality due to cretinism is not commonly cured, although cases of drastic changes in IQ, after the thyroxin has been given, are occasionally cited.

For Figure 14, see pages 140-141.

Mongolism.—Once in a while, the nurse will see a child of caucasian parents who has many of the physical characteristics of a mongolian. Because of his resemblance to an oriental, this child, *if other stigmata are present*, is called a *mongolian idiot*. This type of extreme retardation, like many cases of cretinism, is believed to be due to factors operating in the prenatal environment and not to heredity. Various theories have been advanced concerning *mongols*, as such cases are often designated. Some scientists believe that the condition is connected in some way with the age of the mother. Families in which there is one mongol seldom have another; if the parents are normal, the chances of having another mongolian idiot in the family are only about three in one hundred.⁷

A Word of Caution.—Cretinism and mongolism have been mentioned as illustrative of types of feeble-mindedness which may sometimes be due to prenatal influences. A summary of viewpoints of geneticists would show some difference in opinion. Cretinism, for example, while often due to prenatal environment, may, in some instances develop as a recessive trait.⁷ Not all are agreed that mongolism is due to prenatal factors. The causes of this type of feeble-mindedness have not been thoroughly established, but the consen-

sus of opinion, at present, seems to favor prenatal factors, the nature of which has yet to be discovered.

INTERACTION OF HEREDITY AND ENVIRONMENT

We have discussed heredity and environment as the two great forces which are responsible for variations in human traits. As a matter of fact, separation of the two is arbitrary. In considering certain differences in human characteristics, we cannot rightly say that heredity is responsible, or, on the other hand, that environment is responsible. Studies of many aspects of human heredity are complicated by environmental factors. The reverse is also true; inequalities in hereditary endowment make different reactions to a similar environment probable. Our genes determine our potentialities of development, but our environment determines whether our growth possibilities are to be encouraged or handicapped. An attempt, here, to evaluate the *relative importance* of heredity and environment in causing individuals to vary among themselves, would probably result in confusion and would serve no practical purpose of the student nurse who is taking her first course in psychology.

Each person is what he is because of his own unique heredity, because of the kind of an environment he has now and has had in the past, and because of the way in which his particular combination of hereditary traits and his particular environment interact.

To illustrate how futile it is for the average person, outside the laboratory, to try to weigh the influences of heredity and environment, let us consider an analogy. We have before us, let us say, a violin and a man who plays it. It would be foolhardy to raise the question as to which makes the greater contribution to music, the instrument or the musician. Without the proper instrument the most gifted artist could not produce satisfactory music. On the other hand, the finest kind of instrument might be inarticulate; it would function far below its potentiality if it were played by a person who did not know how to develop the beauty of tone of which it was capable.

Inheritance and environment are related in much the same way that the instrument and the musician are related,—they cannot be weighed separately. If we are to evaluate either one or both we must *evaluate them as they act together*. A child of great potential ability, guided by an ignorant and uninspired parent, cannot live up to his potentiality any more than a rare violin in the hands of an incompetent person can produce beautiful tones.

To carry the analogy a step further, consider what would happen if a

great musician were to attempt to elicit beautiful music from a child's toy fiddle. He could no doubt produce more pleasing sound than could a less skilled artist, but he could never hope to make a toy fiddle sound like a Stradivari violin. A child of limited capability who is guided by an understanding and far-sighted parent or other adult is in some ways like the toy fiddle in the hands of an inspired musician.

A child's fiddle in the hands of an unskilled person and a Stradivari instrument in the hands of an artist suggest two other combinations of hereditary and environmental factors. A person of poor heredity, living in a poor environment does not function on as high a level as he might; a person of excellent heredity living in a superior environment is encouraged to function on a high level.

Heredity, Environment and Mental Growth.—The interaction of heredity and environment complicates studies of various aspects of human growth, but the interaction appears to be especially marked in bringing about variations in intelligence. Indirect studies suggest that heredity may set, for each person, a ceiling beyond which he cannot develop, as far as his *capacity to learn* is concerned. This is true in cases of hereditary feeble-mindedness. If such is the case at higher levels, also, it need not cause the average person to be uneasy because we have every reason to believe that practically everyone functions below his actual potentialities.

A purely theoretical diagram, suggesting a possible ceiling of development at various levels of intellectual performance (intelligent adaptation in general), is presented in Figure 15. It is to be noted that at each level there is a ceiling which is, in all instances, higher than attainment. It is possible that a person who functions on a relatively low level, intellectually, is nearer the limits of his potential development than a more astute person is; we have no means of knowing whether this is true or not. The diagram suggests, merely, that whatever the level of actual intellectual performance may be, it is not as high as it might be. In other words, except in the case of the most retarded of feeble-minded persons, hereditary ceilings, in actual practice, are seldom reached.

The Student Nurse Needs A Viewpoint.—Even after a very short period on the ward, the student nurse cannot fail to be impressed by the fact that patients differ in their readiness to learn. In some instances directions have to be repeated many times. Simple explanations which many patients grasp quickly appear to be perplexing to others. On the other hand, a highly intelligent patient often demands more explanations and is not easily satisfied with routine answers to questions such as patients often ask. In public health practice, the *slow-learning* person presents a real problem.

The nurse often finds it necessary to modify her procedure before she can succeed in teaching minimum health essentials to a woman who does not "catch on" as well as the average person does.

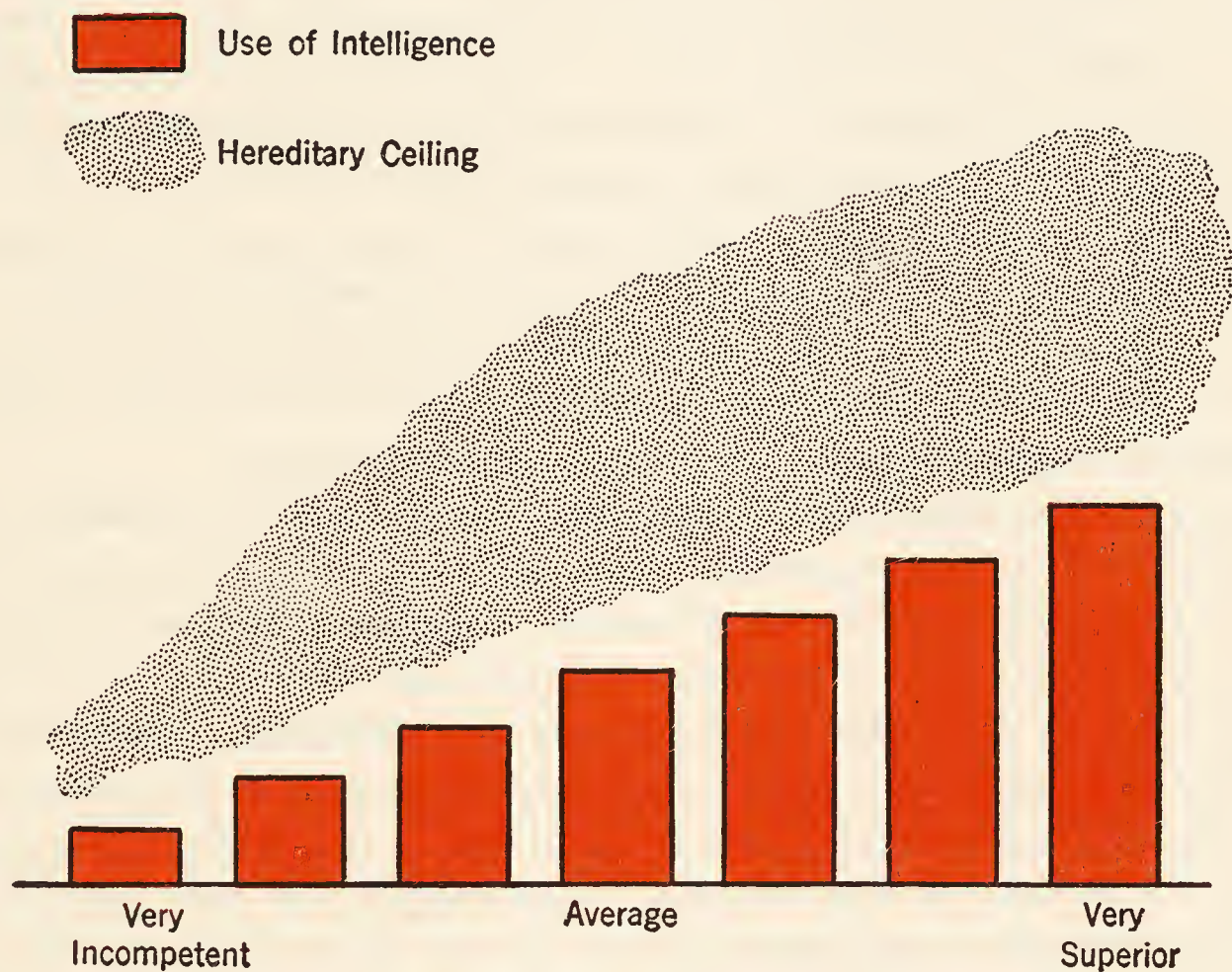


FIG. 15.—THEORETICAL HEREDITY "CEILINGS".

The student nurse, for practical purposes, is more concerned with differences which she notes in *intelligent behavior* than she is academic questions as to how much weight should be given to heredity and how much to environment, in interpreting individual differences in intelligence. She does, however, need a viewpoint in regard to this question, not only for her own benefit in adapting to a world consisting of many kinds of persons, but for her professional work as a guide. It has been suggested, earlier, that the nurse should learn about the nature of heredity in order to counsel wisely on questions relating to prenatal influences or to eugenics. A point of view concerning the interaction of heredity and environment in determining intelligent behavior is just as important in her personal adjustments.

Indirect studies suggest that we are not born equal as far as potentialities for learning are concerned; but intelligence does not appear to be inherited as directly and completely as blue eyes, fair skin, curly hair and similar physical traits are inherited. A child born with potentialities for developing blue eyes, fair skin and curly hair will obviously become a curly-haired blond, regardless of the physical traits of his associates; being brought up in a family in which all other members are dark-skinned, brown-eyed and straight-haired, he will continue to be a fair-skinned, blue-eyed, curly-haired person. Intelligence does not develop in such complete independence of the mental level of family and associates.

A child of good capacity for learning, if brought up in an environment that is mediocre or dull, as far as intellectual stimulation is concerned, may function on a level of mediocrity or dullness. In order to function on a high level, a person must have more than the potentialities for high level functioning, he must, also, have stimulation and opportunity.

Family Resemblance In Intelligence.—When intelligence tests are given to children in the same family they tend to resemble one another in test scores more than they resemble unrelated children. Children are more like their parents in test ratings than they are like adults at large. Identical twins, who are more closely related than any other sibling pairs, are more alike in test ratings than are other children in the same family. In a study of feeble-minded persons who had identical twins (see page 51), the resemblance in intelligence between the twins was greater than between other siblings. A similar resemblance has been noted in studies of identical twins who are not feeble-minded. A tendency for more closely related persons to resemble one another more in intelligence test ratings than less closely related pairs is to be noted in all extensive surveys of family resemblance in intelligence.

Studies of Identical Twins Reared Apart.—To investigate the resemblance between closely related persons who have grown up in different environments, various studies have been made of identical twins who have been reared apart. If differences in intelligence were due to differences in environmental opportunities, regardless of heredity, we should expect to find that identical twins who, from infancy, have been brought up in widely differing environment would be no more alike in intelligence than unrelated children. On the other hand, if intelligence were due to heredity alone, we should expect identical twins who have been reared apart to resemble each other in intelligence as closely as identical twins reared together.

It is only by summarizing studies of twins reared apart that we can find materials upon which to draw even tentative conclusions. In some in-

stances, separated twins have rated very much alike on mental tests, while others have differed greatly. In general, if differences found for a number of pairs are averaged, identical twins reared apart are found to be much more alike in intelligence than unrelated pairs.³

When differences between test ratings of twins are compared with differences between their social and educational ratings, a relationship is clearly indicated.^{8, 9} In general, the greater the difference in environmental opportunity provided for each twin pair, the more likelihood is there that they will differ more in intelligence test rating.

Putting the two sets of data together we find that, on the average, identical twins, reared apart, are much more alike in test ratings than unrelated children, but that environmental factors seem to contribute to the amount of difference found in intelligence test scores.

Studies of Children in Foster Homes.—A tendency for children to resemble their parents in intelligence more than they resemble unrelated persons has already been noted. When parents are unintelligent, they tend to fall short in providing intellectual stimulation for their children. Some, but by no means all intelligent parents, provide for their children an environment that is intellectually stimulating. Once more, it appears that hereditary and environmental factors interact in bringing about differences in intelligence. In an attempt to evaluate the relative influence of heredity and environment a series of studies of foster children has been made. While the student nurse is not, at this time, prepared to study the *relative weight* of inheritance and environment she will find, in such studies, additional evidence of the interaction of the two sets of factors.

A significant study was made of 154 children who were taken from deprived homes and placed in better foster homes before they were six months of age.¹⁰ The children were given intelligence tests at intervals. The whole group was tested when the children were about two years old and again when they were between four and four-and-a-half years of age. Most of the children were tested a third time when they were, on the average, about seven years old. At no time, did any of the children test *inferior*. The group, as a whole, tested *above average* on all three tests. In view of the fact that the real home backgrounds of the children were poor and that the mothers who were tested averaged slightly below normal in intelligence, this is a better showing than could be expected if intelligence (as measured), is due solely to heredity. It appears that this group of children profited by a change from a poor to a better home environment, as far as their intelligence rating is concerned.

The same psychologist made a further study of 16 of the children whose

mothers rated *feeble-minded*.¹¹ These babies, at the age of six months or less, were placed in foster homes. At the age of two years and three months, the group, on the average, rated *superior*. About two years later, the average rating was in the upper ranges of normal. If the babies had been left in their homes with their feeble-minded mothers it is unlikely that they would all have rated so well.

Studies of Children in Institutions.—Studies of children who have been changed from one institution to another suggest that a child's mental rating may be influenced by the general level of his associates. In one study of children living in four institutions (an orphanage, a juvenile home and two institutions for the feeble-minded), children were tested when they were shifted from one institution to another and re-tested some time later.¹² In general, children tended to lose in intelligence test ratings, as they continued to live in institutions. The loss was greatest among children in institutions for the feeble-minded. When children of the same IQ were compared, it was found that those who were shifted to an institution for the feeble-minded tended to lose while those who were shifted to another type of institution held their own.

Some Practical Questions Concerning Intelligence.—Does the evidence that has been assembled to suggest the interaction of heredity and environment, in causing differences in intelligence, indicate that a good environment can offset bad heredity? Suppose that a young man or woman, contemplating marriage, knows that there have been instances of feeble-mindedness in the family, should that person marry and bring children into the world? To answer the question, we should certainly want to know something about the nature of the feeble-mindedness which has shown itself in the family. If we could be sure that it was of the non-germinal type, we should have no reason to question the marriage and the plan to have children. If we could be reasonably sure that the feeble-mindedness was of a type which is probably hereditary, we should be forced to conclude that the weight of evidence is against taking the chance.

Suppose that a highly intelligent couple who planned to adopt a baby were to choose two healthy looking, physically normal babies, one of superior heredity as far as the intelligence of his parents and ancestors is concerned, the other child of a feeble-minded mother and a father whose general level of living does not indicate superiority. Which should be chosen?

We should again want to know the nature of the parent's feeble-mindedness, and that, of course, would be most difficult to discover. We might consider studies of babies taken from feeble-minded mothers and placed in good families to develop at a rate that is better than normal (at least during the

early years of life). After weighing both sides of the question we should be obliged to determine whether the *odds* were against adopting the baby of known inferior background. In the light of present-day knowledge the odds do not seem to favor this decision.

Heredity, Environment and Personality.—Throughout the text, *personality* is considered as everything which makes each person stand out as an individual. Level of intellectual adjustment is one important aspect of personality. It appears to be conditioned by heredity, but dependent, for development, upon environment, as has just been suggested.

Special aptitudes such as musical talent, ability in certain creative arts, in athletics, or in mechanics, for example, contribute to individual uniqueness. Such aptitudes appear to be conditioned by heredity only to the extent that they are dependent upon inherited structure. A child, who because of hereditary structural defect, is born deaf, would be unlikely to develop as a composer; a child, blind from birth because of heredity could not become a great painter; a child who is born spastic is unlikely to become a good dancer. The *negative* aspect, or the *limitations* placed by heredity upon the full development of certain aptitudes is obvious.

On the positive side, a person who, through heredity, is unusually well endowed with whatever special structural advantages may be needed for the development of his particular aptitude, can develop his special capabilities only when environmental conditions favor their development. Great musicians often have children who show great talent in music, and children of scientists not infrequently follow in the parents' footsteps, but we cannot tell how much of the child's "genius" may be attributed to his inheritance and how much to an environment, which is unusually rich in opportunity. We can be sure, however, that, without nurture, special aptitudes cannot flourish.

Certain traits of *temperament* or disposition may be partially due to structural heredity, such as hereditary characteristics of the functioning of endocrine glands, and general constitutional vigor or its lack. Children in the same family show differences in disposition during the first few months of life. We cannot attribute any one's disposition to heredity alone, however, because no one grows up in a social vacuum. Some persons are more calm than others, but a sufficiently irritating environment would no doubt disturb the most serene of persons; if he were obliged to change to such a disturbing environment and were to remain there we have no way of knowing how long he would be able to maintain his calm disposition.

Many aspects of personality are clearly products of environment which are conditioned relatively little by heredity. Ambitions and purposes, social beliefs, political and social outlook, ethical and moral codes, and other char-

acteristics too numerous to mention are, in the case of the average person, learned traits which are not greatly complicated, by heredity.

SUMMARY

We have suggested that we differ among ourselves in measurable traits in much the same way that boys of a given age differ in height, or birds, in flight, differ in speed. Differences are not clean cut, but shade, so gradually, from one extreme to the other that no trait should be considered on an *all or none* basis.

Much of the material upon which we have based theories of human heredity has resulted from experimental studies of lower animals. Studies of human beings provide circumstantial evidence of the inheritance of certain traits. Geneticists agree upon basic principles governing heredity.

Whatever is due to hereditary genes is determined at the time that the sperm and egg unite to form a new individual. *Germ* cells are not permanently influenced by anything that may happen to *body cells*.

Permanent physical characteristics which make a person unique are believed to be primarily hereditary. Blood types and glandular types are usually regarded as due to hereditary factors. Inheritance is believed to be a factor influencing constitutional differences.

Certain defects such as hereditary forms of insanity and feeble-mindedness are probably due to a combination of recessive genes.

Persons who are "incurably incompetent", or feeble-minded, presumably, develop at a slow rate and never reach the mental development of the average person.

Circumstantial evidence suggests that feeble-mindedness is to be regarded as hereditary, under certain conditions. Prenatal influences, birth injuries and injury or disease in later life also appear to be factors in some instances of mental retardation.

Environment is a much broader term than most students suppose. It includes geographical or physical surroundings, but it also includes social and cultural opportunities, and customs, beliefs and traditions. Interpersonal relationships must also be considered in any discussion of what is meant by environment.

One environment which is sometimes overlooked is that of the growing organism before birth. To illustrate how prenatal experiences may influence development, we have considered prenatal factors as they seem to enter into certain types of mental defect.

Hereditary and environmental factors have been considered separately,

only that we might examine the two great forces, with a minimum of confusion. We need to consider the two as interacting forces. We have discouraged an attempt to estimate the *relative* weights of heredity and environment, as factors entering into certain variations.

Using variations in intelligent behavior as illustrative of the interaction of hereditary and environmental factors in causing human differences, we have suggested the analogy of musical instruments of different potentialities (representing heredity), in the hands of skilled or unskilled players (representing environment).

Continuing to use the growth of intelligence as illustrative of other traits which seem to be dependent upon the interaction of heredity and environment, we have suggested that any ceilings which heredity may set, for any but the most feeble-minded, appear to be far above actual development.

In order that the student nurse may better appreciate the vast amount of research upon which even tentative conclusions about the interaction of inheritance and environment are based, we have presented various studies of intelligence in relation to hereditary and, also, in relation to environmental factors.

Studies of family resemblances, especially studies of twins, suggest that hereditary factors in intelligence should not be disregarded. Even though they may be reared in different environments, identical twins, *on the average*, are more alike than unrelated persons.

The same studies suggest that some separated twins do differ greatly in intelligence and that the amount of difference appears to be related to differences in educational and cultural backgrounds.

Studies of children in foster homes and in institutions also indicate that environmental factors are very important.

Putting all results together, we must conclude that both factors contribute to differences in intelligent behavior.

In other traits, too, the interaction of hereditary and environmental factors is probably much the same. Everyone is the kind of person that he is because of his unique inheritance, his unique experiences and the way the two forces interact.

In this chapter we have emphasized the fact that no two persons are or can be alike. To a student who is eager to understand human behavior, this may appear somewhat discouraging. There are, however, certain characteristics which we have in common and these we shall discuss in the next chapter.

SUGGESTED ACTIVITIES

1. **Discussion.** Answer each of the following questions *yes*, *no*, or *that depends*, and give reasons for your answers.

(1) If a brilliant lawyer suffers from a war neurosis, would his children, born after his breakdown, be likely to be nervous?

(2) If a grandmother, her daughter and the daughter's child all have temper outbursts does that mean that a disposition to have temper tantrums is probably inherited?

(3) Some patients, when hospitalized, are friendly while others are aloof. Are they born unfriendly or aloof?

(4) Is it possible to weigh the relative influences of hereditary and environmental factors upon individual differences in intelligence?

(5) Would you advise the adoption of any newborn who looked normal?

(6) A student nurse who had grown up on a prosperous farm near a city thought that her environment had limited her learning potentialities. Do you think it probable?

(7) If, as a student nurse, you find it difficult to make a patient understand your suggestions, do you think that it is good psychology to conclude that he is feeble-minded?

2. **A plan for observation.** Observe the infants in the nursery, from whatever vantage point is feasible, to discover ways in which they differ. Compare notes.

3. **Study of your environments.** You may want to think through the following, for your own satisfaction, or you may find it interesting to compare notes. In either event, an attempt to analyze your environments should add to your insight into what is implied in the term.

(1) What are some advantages or disadvantages which might be attributed, *partially*, to the geographical or physical environment in which you have grown up?

(2) What would you include among the contributions to you of your social and cultural environment?

(3) Compare your environment of belief and traditions with that of one of your friends.

(4) What are some of the high-lights in your inter-personal environment, as you look back upon your years in the family?

4. **Discussion.** Consider some practical problems relating to heredity and environment. Propound your own question and discuss whether you have now, or might have, factual materials upon which to base an answer. As illustrative

of questions which you might ask, consider the question about adopting a baby of feeble-minded or unknown parentage which has already been discussed.

5. **Notebook suggestion.** Make a study of a certain trait which seems to "run" through your family. Consider common heredity and common experiences. In a column on one side of the page, indicate the relationship of those who show the traits to a marked degree (as cousins, aunt, niece, etc.). On the other side in a column write common experiences which might be significant in the development of the trait.

SUGGESTIONS FOR READING

Anderson, John. "Freedom and Constraint or Potentiality and Environment," *Psychol. Bull.*, 1944, 41, 1-29.

The discussion is directed by psychologists, but is so clearly stated that the student may find much of value. It treats of different kinds of environmental influences.

Frank, L. K. "Man's Multidimensional Environment," *Sci. Mo.*, N. Y., 1943, 51, 344-357.

A scholarly but provocative discussion of different kinds of environments.

Glass, H. B. (See complete reference below.)

This is a small volume and may be read selectively. As the title indicates it treats of genes.

Jennings, H. S. (See complete reference below.)

This is a simple statement of problems of heredity as viewed by one authority.

Penrose, L. S. (See complete reference below.)

A clear presentation of viewpoints regarding causes of feeble-mindedness.

Scheinfeld, Amram. *You and Heredity*, published by J. B. Lippincott Co.

This is a popularized treatment of heredity, based upon wide study of the work of Mendel, read Chapter X. Chapters XVIII and XIX deal with multiple births, including a theory concerning the Dionnes. Diseases commonly believed to be hereditary are discussed in Chapter XXI.

Shrodes, Caroline, Van Gundy, Justine, and Husband, Richard W. *Psychology Through Literature: An Anthology*, New York: Oxford University Press, 1943.

For a brief discussion of the influence of physical characteristics upon behavior and excerpts from literature illustrating the significance of physical traits or adjustments, read selectively from "Physical Heritage," pp. 3-33.

Valentine, Willard L. *Experimental Foundations of General Psychology*, New York: Farrar and Rinehart, Inc., 1941.

For a summary of six studies of intelligence ratings of different groups, including isolated and primitive groups, read Chapter VII.

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- ⁶ ROSANOFF, A. J., HANDY, L. A. and PLESSET, I. R. "The Etiology of Mental Deficiency with Special Reference to Its Occurrence in Twins; A Chapter in the Genetic History of Human Intelligence," *Psychol. Monogr.*, 1937, 48, No. 216.
- ⁷ PENROSE, L. S. "The Inheritance of Mental Defect," *Sci. Mo.*, N. Y., 1941, 52, 359-364.
- ⁸ NEWMAN, H. H., FREEMAN, F. N., and HOLZINGER, K. J. *Twins: A Study of Heredity and Environment*, Chicago: University of Chicago Press, 1937, 34.
- ⁹ STODDARD, George. *The Meaning of Intelligence*, The Macmillan Co., New York: 1943, (p. 341, a discussion of 8).
- ¹⁰ SKODAK, Marie. Children in Foster Homes: A Study of Mental Development, *Univ. Ia. Stud. Child Welf.* 1939, 16, No. 1.
- ¹¹ ——— "The Mental Development of Adopted Children Whose True Mothers Were Feeble-Minded," *Child Developm.* 1938, 9, 303-308.
- ¹² CRISSEY, O. L. "Mental Development as Related to Institutional Residence and Educational Achievement," *Univ. Ia. Stud. Child Welf.*, 1937, 13, No. 1.

Chapter V

THE HUMAN ORGANISM

We have just observed that no two persons are or can be alike in their reactions. This is an important fact for the student of psychology to bear in mind at all times, but, on the other hand, if we are to improve our ability to *predict* responses and to *control* behavior we shall want to discover certain characteristics of behavior which are shared by all persons. Although we can never hope to discover patterns underlying the complex reactions of our associates, we can trace certain vital principles which seem to apply at all times to many aspects of behavior. *Behavior* includes all the responses which a person makes in adapting to his environment. It refers not only to overt (open to view), reactions but to responses such as remembering and forgetting, feeling depressed or elated, being cold or hungry, and liking or disliking certain subjects, persons or things.

VARIETIES OF RESPONSE

For purposes of illustration, let us consider a series of hypothetical experiments, hoping to discover different kinds of responses to what, to an observer, would seem to be the same stimulus. The stimulus, in this instance, is the light from a flashlight suddenly turned on the eyeball. Suppose that we flash the light into the eyes of a young baby. If he is a normal baby and awake, he will undoubtedly make a response of some kind, even though it may be nothing more than an increase in his general bodily activity. His response is what we call an *overt, motor response*. If we were to try the same experiment with many other babies of the same age we should expect to elicit similar responses. In other words, after a few such experiments, we should be able to predict what would be likely to happen if we were to flash a light into the eyes of a baby of a certain age.

Next, to extend the experiment, suppose that we study the reactions of babies a few months older. The stimulus, as far as anyone can determine from watching the experiment, is the same as before, a light suddenly flashed into the eyes. Can we make any prediction about the reaction of the older baby? After we have tried the experiment a number of times, with a number of

babies, we shall, no doubt discover that older babies make a more controlled and more useful type of response. They will, perhaps, turn their heads away from the light. The response of the older baby, we note, is a *controlled, overt*, motor response. As far as we can see, this is the only type of response which the baby makes. This does not mean, however, that he does not make any other responses; it means only that that is the only type of response which we can see.

For illustration of a more complex type of behavior, let us continue the experiment with children of pre-school age. For our first subject we select a two-year-old child who is playing in a sand pile. Can we predict what he will do? We can be reasonably sure that he will make some type of overt, motor, controlled response but we cannot be at all sure about the nature of his total reaction. Perhaps he will run away. Perhaps he will shake his head as if trying to shake the light out of his eyes. Perhaps he will shift his position so that he has his back turned to the light. He may cry out. He may demand to know what we are doing. He may laugh. If we prolong our experiment, he may change his type of reaction, perhaps becoming red in the face and tense.

We can see that he makes motor responses of various kinds and we can also observe that his responses are much more complex than those of the babies. If the child cries out or becomes red in the face and his muscles become tense we shall probably say that he is making an *emotional response*. If he makes an emotional response we can be sure that it is much more complex in nature than the outward signs indicate. When a child makes a response which we call *emotional*, when he becomes pale or red in the face and his muscles become tense, something is happening within the organism to cause him to flush or to become tense. If, in our experimental situation, a child makes an emotional response to a light, we can be sure that his reaction is related to some experience which he has had at an earlier date. In order to become emotionally disturbed he must make a *remembering*, a *thinking*, or an *intellectual* response of some kind.

We cannot predict the response of a two-year-old child to our experimental situation, beyond the prediction that he will make some controlled motor responses, that he may make an emotional response of some sort and that he will probably make an intellectual or a thinking response. Let us speculate, now, as to what might happen if the conditions of the experiment were different. We have assumed that the experiment is to be conducted by a person whom the child does not know. Suppose, on the other hand, that the flashlight were to be manipulated by a person whom the child knew and liked. He would be less likely to become angry or frightened than he would if the experiment were conducted by a stranger, because the child will react, not only to

the light but to the person who is using it. If he has participated in a similar experiment at an earlier date he may enjoy the experience. If he has been told in advance that the light is to be flashed in his eyes, he may make a still different response. We can see also that what he is doing at the moment of the experiment will influence his reaction. If he is very much interested in his play, the experiment may prove to be an unpleasant interruption. On the other hand, if he has become bored with what he is doing and is looking about for some new interest, his response to the light may be a favorable and an interested response.

UNDERLYING PRINCIPLES NOTED

No Behavior Is Haphazard.—Assuming that our series of experiments has been concluded, perhaps we can trace certain principles of behavior which seem to be applicable in each instance. In all the experimental situations cited, the behavior which we have noted was always in response to the light stimulus. Before being stimulated by the light each child was behaving in a certain way; as soon as he was stimulated by the light his behavior changed. This is true of behavior in general. No one ever *just happens* to increase his bodily activity, turn his head, shift his position, become emotionally disturbed, or recall an earlier experience. In the course of her study of psychology, the student nurse will see that this same principle seems to hold at all times. No one just happens to show preferences, to have prejudices, to want to help people or to want to become a nurse. *Behavior, no matter what type of behavior it may be, is always in response to something.*

Behavior Is Not Fragmentary.—In each of our experimental situations, the response seems to have involved the whole child. The youngest baby did not merely wave his arms; his whole body was thrown into activity. The baby who turned his head away from the light organized his body to make that response possible. The older child who turned his back, ran away, or called out to the experimenter made a very complex reaction, in each instance. Let us look at the response of the child who presumably became angry or showed fear. He made an overt, motor response, in turning away, in running, or in crying out, but that was not all. As we observed, he became red in the face and his muscles seemed to become tense. Something apparently was happening within the organism of which the flushing and tensing was merely an indication. Apparently this is not the same type of response as the motor response which we see readily. In becoming angry or frightened, the child must have related the experience to something that had happened at an earlier date. The flashlight in the hands of the experimenter evidently caused him to

remember some earlier experience even though his memory of the experience was not necessarily clear. We can be sure that he made at least three kinds of response: he made a response of motor activity, he made an emotional response and he made an intellectual, or thinking, or a remembering response. *We tend to make varied and complex responses to any situation to which we respond at all.*

We React to Total Situations.—The behavior of the preschool child illustrates what is meant by *reacting to the total situation*. The relationship which exists between the child and the experimenter is, as has been suggested, one factor entering into the total situation, a child will respond in one way to a person whom he knows and likes and in a different way to a person whom he knows and does not like. He responds in a still different way to a person who is a stranger to him. What a person is doing at any one time is also a factor influencing his response to new stimuli, as we have suggested. A person who is bored and looking around for some new interest tends to respond more favorably to some new situation than he would if he were very much absorbed in what he was doing. Readiness to react to a new situation is also a factor, as in the case of a child who has been told in advance about the light and knows what to expect. Fatigue, hunger and innumerable other conditions enter into the *total situation* to which one may respond. *The total situation to which we respond at any one time depends upon many factors such as physical condition, previous experiences with similar situations, immediate interests and immediately preceding activities.*

RESPONSE MECHANISMS

Everyone makes responses of the same types as those made by children in our hypothetical illustrations. We all make overt motor responses, emotional responses, and responses that involve intellectual activity. All human beings are alike in this respect. Heredity determines that the human organism will develop according to a pattern. It determines that man will be able to respond to the world around him and that he will be able to profit from past experiences. Certain mechanisms of response are common to all men. In each of the illustrative cases we noted that the child *moved* in some way. He did so because he was able to make use of his *striated muscles*. The child who showed fear or anger indicated that certain *smooth muscles*, *cardiac muscles* and *glands of internal secretion* were especially active. In every instance in which the child responded in the light of his past experiences he also made use of the higher centers of the central nervous system.

Smooth Muscles.—We shall not discuss striated muscles as mechanisms

of response because their function in general behavior is obvious, and of less interest, psychologically, than the functions of smooth muscles and endocrine glands. Unlike the responses of the striated muscles, which are often evident to the observer, smooth muscle activity is not easily observed. The smooth muscles are located within the organism: in the arteries and veins, the stomach and intestines, in the skin, in certain duct glands, in the bronchi, the esophagus, and in the passages and ducts of the genito-urinary organs. While we cannot see the smooth muscles in action, under ordinary conditions, we can often see the outward signs of their activity. An angry person becomes red in the face. A frightened person may become pale. One who is startled may catch his breath. Reactions which we associate with emotional disturbance are the outward manifestations of changes in the activity of the smooth muscles.

The Duct Glands.—Duct glands, like striated muscles, are of psychological significance mainly because they function in connection with the smooth muscles and the ductless glands. When an agitated person perspires freely it is only partially because of the activity of the sweat glands; their activity is a symptom of a complex organic reaction. Similarly, the temporary failure of the salivary glands and the dry mouth which sometimes accompanies emotional disturbance are symptoms of a stirred-up bodily state. Under normal and placid conditions the *gastric* glands maintain a state of unruffled activity, but these, like other duct glands, fail to function placidly under certain conditions of stress and strain. These are but illustrative of duct glands and their functions. The student nurse has many opportunities to acquaint herself with their nature and function.

The Ductless (Endocrine) Glands.—One of the most significant of the response systems and one about which relatively little is known is the endocrine system. The action of the endocrine glands is of great interest to psychologists because the little that is known suggests that endocrine activity serves to raise or lower the threshold for various responses; that endocrine activity tends to influence a person's efficiency; and that endocrine activity is important in an understanding of emotional behavior.

In contrast with the duct glands which secrete to specific parts of the body, the endocrine or ductless glands influence the whole body. This is due to the fact that they secrete hormones directly into the bloodstream. In this way the hormones regulate body chemistry and, indirectly, influence overt behavior. Endocrinologists have not been able, as yet, to trace a direct connection between changes in the activity of specific glands and specific overt behavior. There is, however, much evidence that the activity of the various endocrine glands relates in a general way to personality characteristics. The endocrine glands, apparently, do not function singly, but rather as intricate

systems of *interrelated activity*. Something is known, however, about the predominant action of some of the glands. Psychologists are especially interested in the speeded and retarded activity of the pituitary, thyroid, parathyroid, and adrenal glands. The location of these glands is shown in Figure 16.

Pituitary Gland.—The pituitary gland, which is about the size of a large pea, is located within the skull at the base of the brain. The secretion of the anterior lobe appears to be related to certain aspects of skeletal growth, to the development of sex characteristics and to metabolism. Because of the influence which it exerts upon other glands the pituitary is sometimes called the *master gland*.

Hypersecretion of the hormones of the anterior lobe of this gland may result in excessive height, in the case of a young person, and, in the case of an adult, in abnormal growth in the jaw and cheek bones and the long bones of the body, a condition known as *acromegaly*. When there is undersecretion of the anterior lobe of the pituitary gland, dwarfism sometimes results. It is obvious that a person who is very much taller than his associates, or on the other hand, a person who is very much smaller than those with whom he is associated will be, in some respects, a misfit. The social world and its equipment are suited to persons who fall within the middle ranges of size. One who falls far outside the average group not only finds that he is a physical misfit, he tends also to be a social misfit. While we cannot say that hypersecretion or hyposecretion of the anterior lobe of the pituitary has a direct influence upon general behavior, its indirect influence is apparent. In a similar way overt behavior is influenced by the excess or under secretion of this gland when it results in the speeding up or the retardation of secondary sex characteristics. Because the anterior lobe of the pituitary, with the thyroid, adrenal and parathyroid glands, influences carbohydrate and fat metabolism its activity is indirectly related to numerous other behavior characteristics.

The secretions of the posterior lobe of the pituitary gland are less directly related to general behavior. This secretion regulates the tonicity of smooth muscles and influences blood pressure, hence is not totally *unrelated* to changes in overt behavior.

The Thyroid Gland—Hypersecretion.—The thyroid is located in the neck on each side of the larynx. It consists of two lobes and a connecting isthmus. The secretion of this gland is called *thyroxin*. The chief function of the thyroid is to maintain a normal rate of metabolism. A person who suffers from an excess secretion of thyroxin seems to be “burning up his energy” at a rapid rate. In some instances, an excess secretion of thyroxin produces an enlargement of the thyroid gland which is characteristic of exophthalmic

THE ENDOCRINE GLANDS

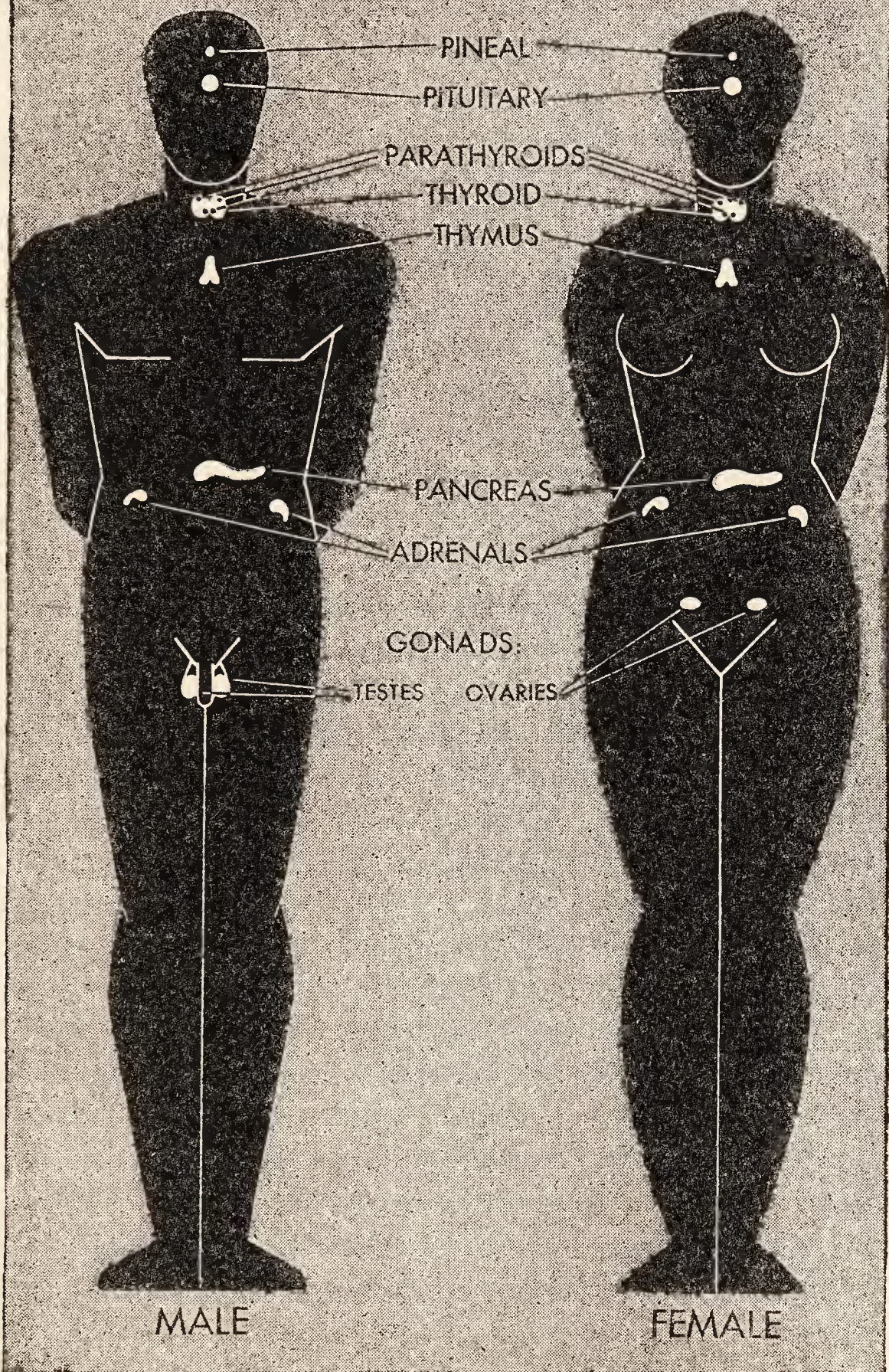


FIG. 16.—LOCATION OF CERTAIN ENDOCRINE GLANDS.

(From Keliher, *Life and Growth*, D. Appleton-Century Company, New York.)

goiter or Grave's Disease. Contained in thyroxin is a large amount of iodine which is necessary to the maintenance of normal bodily functioning. In certain areas of the country the waters are lacking in iodine content. In the absence of a normal intake of iodine a severe strain is put upon the thyroid. The gland works harder to try to produce thyroxin and so gets larger; this is simple or endemic goiter.

The typical physical characteristics of one who suffers from hyperthyroidism are of course less significant, psychologically, than are behavior characteristics of a person who has this tendency. Excess secretion of thyroxin tends to make the person restless and hyperactive and possessed of a tremendous drive. Symptoms which the nurse will see are increase in body temperature, a flushed and moist skin and a tendency to insomnia.

Hypothyroidism.—A person who has an insufficient secretion of thyroxin is, in some respects, the opposite of the active, energetic, driving hyperthyroid person just mentioned. He seems to be generally "slowed-down". He may be slow, not only in bodily activity, but in his speech and his thinking. A marked underactivity of this gland in adult life results in myxedema. In addition to the behavior symptoms just mentioned, a patient suffering from this disease tends to lose his hair and his skin becomes dry. His body temperature and metabolism are low. He is lacking in physical drive. His appetite apparently remains normal, so, because of his inactivity he tends to become obese. Because of his lack of drive he may appear to be dull or mentally sluggish.

When the lack of sufficient thyroxin is due to a prenatal condition or, possibly, to a lack during early infancy, *cretinism* results. This condition, as we noted in Chapter IV, is usually accompanied by evident low intelligence.

Parathyroid Glands.—These small glands, usually four, lie on each side of the neck, adjoining the lobes of the thyroid gland. The functioning of the parathyroids is psychologically interesting because they regulate the relation between calcium in the blood and calcium in the body tissues. When there is an unusual amount of calcium in the blood and not in the tissues, weakness and depression may result. When too little calcium is present in the blood the patient may become nervous and extremely irritable and muscular tremors and tetany may result. It has not been possible, however, for scientists to discover a direct connection between specific behavior characteristics and the secretion of the parathyroid glands.

Adrenal Glands.—The adrenal glands are located just above the kidneys. The two parts of the adrenal glands, the cortex, or outer layer, and the central tissue, or medulla, secrete different hormones and have different functions. Cortin, the secretion of the outer layer of the adrenal gland is es-

essential to the maintenance of life. It is also related to the normality of secondary sex characteristics.

The adrenal medulla, which secretes adrenalin, is of especial interest to the psychologist, because the action of adrenalin appears to enter so largely into emotional behavior. Excess secretion of adrenalin, or, as it is sometimes called, *epinephrine*, has a marked influence upon various bodily processes. Through its action upon the smooth muscles, as it sends fuel to the striated muscles, adrenalin tends to inhibit vegetative activities of the organism such as digestion. With increased adrenalin, the air passages of the lungs tend to dilate, making it possible for more oxygen to go to the lungs. Excess secretion of adrenalin is accompanied by an increase of the secretion of glycogen by the liver. This increase in glycogen tends to neutralize fatigue. The glycogen which the striated muscles cannot use is excreted by the kidneys. *Glycosuria*, or the presence of sugar in the urine is one indication of emotional stress. It is sometimes called *emotional glycosuria*. Increased secretion of adrenalin tends to be accompanied by increase in the rate of heart beat. Bodily reactions accompanying excess secretion of adrenalin serve to get the organism ready for an increased output of energy.

Liver And Pancreas.—As we have just noted, the secretion of sugar into the blood by the liver sends fuel to the striated muscles and to other tissues. Because of its secretion of bile, the liver is significant in digestion and indirectly significant, psychologically, because of the connection between inhibited digestion and emotional disturbance.

The pancreas is primarily a duct gland but it also secretes hormones into the blood stream. The hormone from the pancreas is insulin. Insulin appears to make it possible for sugar in the blood to be used by the tissue cells. It is the spark which ignites the fuel. The nervous system, and especially the brain, apparently needs glucose for fuel. When not enough insulin is secreted, the tissues, where it is normally burned, cannot use the blood sugar, and the kidneys excrete it. The nervous system is then relatively lacking in fuel. When insulin is secreted in excess of a normal amount, too much sugar is oxidized in the various parts of the body and nervous activity is increased. Under some conditions a patient may suffer insulin shock, which is due to too little blood sugar, or hypoglycemia.

Pineal Body And The Thymus.—The pineal body is located within the skull near the brain. Not much is known about its activity. It is possible that it may not secrete at all. Its action is believed to be related in some way to puberty. The thymus, which is located in the chest, has no known hormone action. It, too, is believed to be related to puberty. Both the pineal gland and the thymus tend to become smaller after puberty. It is possible

that an overdevelopment of the thymus is also related to breath-holding in early childhood, a reaction which is often dismissed as "purely psychological".

Characteristics of Response Mechanisms.—We have mentioned the most evident of the response mechanisms. Striated muscles which are involved in movement, duct glands, smooth muscles in the viscera and the various glands of internal secretion may, to the student, appear to be material which one might not expect to find in a textbook in psychology. To understand behavior we must understand basic response mechanisms. This is one reason why space has been allotted to physiological concepts in this book. A second reason why the physiology of response has been touched upon here is that a knowledge of bodily functioning, especially the functioning of endocrine glands, is necessary to an understanding of emotional behavior. Striated and smooth muscles, duct and ductless glands, acting together in response to all sorts of situations, make it impossible for our behavior to be fragmentary and make it necessary for our responses to be *very complex and integrated*.

RECEIVING MECHANISMS

In our illustrations of reactions of babies and young children to a light suddenly flashed in the eye, we noted that the light brought about a change in behavior. We also noted that the changed behavior was always a response *to something*. We might have noted, further, that the situation which brought about a change in behavior was due to a *change in the child's environment*. These responses to the outer world are possible because we are endowed with sense organs or *receptors* which keep us in touch with all sorts of changes in the world around us.

A receptor or sense organ is a highly sensitive part of the body which is adapted to respond to a specific type of change. There is much going on in the world around us and within the organism to which we make no response, because we do not have specialized receptors adapted to every change. If we were responsive to all energy changes and all chemical stimuli, the world would be a great booming confusion.

Exteroceptors.—In thinking of sense organs, our first inclination is to hark back to childhood and to recall the familiar five senses of touch, taste, sight, hearing and smell. As a matter of fact, we have not five senses but many. The senses which we know best are called *exteroceptors* because they keep us in touch with changes in the external world.

Skin Receptors.—The skin contains innumerable highly sensitized nerve endings and more complex end organs which respond to various types of

stimuli, some of which are mechanical, some thermal and some chemical. The complexity of skin sensitivity can be appreciated if we recall just a few of the experiences which come to us by way of the skin receptors, or cutaneous end organs. We respond to changes in temperature and to pressure. We experience itching and tickling, which are differentiated experiences. There are other experiences which we designate as painful. We do not know just how many specialized receptors there are in the skin but the three that are the most commonly acknowledged are those of pain, temperature and pressure. We know that there are different receptors for heat and for cold. The student nurse may test this for herself by holding her left hand in cold water (about 20°C), and her right hand in warm water (about 40°C), for a short time before immersing both hands in water that is neither cold nor hot (about 30°C). She will discover that her left hand will feel warm and her right hand, cold; two different sets of receptors are apparently stimulated. Another way to test for differentiated heat and cold receptors is to mark off about a square inch on the skin and to make about one hundred dots within this square inch area. The subject of the experiment should have her eyes closed while the experimenter first uses a pointed instrument heated to about 43°C . The subject is asked to report "warm" whenever she feels a sensation of heat. It will be noticed that many of the spots are apparently insensitive to warmth. This may be followed by a second experiment, with a pointed instrument cooled to about 12°C or 15°C . It will be observed that by no means all areas within the square inch are sensitive to cold, but that more are sensitive to cold than to heat.

If a sharp instrument is used in an experiment, such as the one cited above, it will be discovered that most areas are more or less sensitive to pain. Pain thresholds are not the same in all parts of the skin. They also may vary from day to day.¹ One of the most remarkable characteristics of skin receptors, as of other receptors in the body, is their capacity for adapting. This is illustrated in the experiment with water of different temperatures. We can become adapted to pressure, heat and cold and to some extent, to pain.

Gustatory Receptors.—The receptors for taste, like the skin receptors, are complex and varied. They consist of taste buds located in the ridges, or papillae of the tongue. The stimuli to which they respond are chemical in nature. Various substances *in solution* act in different ways upon the taste buds. The receptors near the tip of the tongue are believed to be especially adapted to sweet solutions, those at the side to sour and salty substances, and those at the back to bitter. The power of the organism to adapt is illustrated once more in the behavior of the taste buds. After eating very sweet

food, moderately sweet food tastes flat. Similarly, after eating highly seasoned food, food which is less well seasoned may be distasteful. Some nutritionists who argue that the diet of the young child should consist of bland foods, base their argument upon the adaptability of the organs of taste. The child who has not *cultivated a taste* for highly seasoned foods is satisfied with a bland diet which contains many of the ingredients which are necessary to good nutrition.

Olfactory Receptors.—The receptors for odorous substances are nerve cells with fibers which extend into the mucous membrane of the upper part of each nasal passage and terminate in fine hairs. The stimuli to which these receptors are adapted are gaseous substances of various kinds, but the action of these substances upon the nerve cells is believed to be chemical, due to changes which occur when the gases reach the moist surfaces of the nasal passages, where the molecules are dissolved in mucus. The different types of odors to which the olfactory cells respond are variously classified, but they are usually grouped under: spicy, flowery, fruity, resinous, burnt and foul. It is not known whether the sense organs for smell, like those in the skin and the organs for taste, are specialized. Smell and taste are very closely related and apparently act together much of the time. Certain food substances, dissolved in mucus, would lose much of their savor, or relish, if we could not smell as well as taste.

Like the other receptors previously mentioned, the organs for smell have a great capacity for adaptation. The student nurse can illustrate this in her own experience. Working, as she does, in an atmosphere of drugs and disinfectants, she very soon learns to disregard such odors and tends to forget that a person who has recently come into the hospital may, at first, be unusually alert to hygienic but not always pleasing odors.

Auditory Receptors.—The primary receptor for hearing is the organ of Corti, a structure located in the cochlea, a cone shaped portion in the inner ear. An analysis of the anatomy of the ear would be most interesting at this point, because the ear, from the standpoint of mechanics, is a miracle of construction. (For a detailed discussion of the anatomy of the ear the student nurse is referred to her textbook in anatomy and physiology.) The external ear, which acts as a funnel, catches the vibrations of the air and causes them to beat upon the eardrum, or tympanum, a membrane which divides the external ear from the middle ear. The vibrations of the eardrum, in turn, cause three small bones in the middle ear to be active. These bones serve to magnify the vibration and pass them on to the cochlea of the inner ear, which is filled with liquid. The cochlea resembles a snail shell in structure and has a wide end and a narrow end or apex. Within the cochlea are canals and

along one of these canals there is stretched a membrane which contains the organ of the Corti and its 43,000 specialized *hair cells*.

Because we are especially interested, at this point, in discovering how the organism works, we shall find it worth our while to consider the nature of the stimuli to which receptors for hearing respond. As was stated earlier, a stimulus is always a change of some kind. The stimulus for hearing is a change in the vibrations of the air. We hear because of actual disturbance in the air, due to varying rates of condensation (contraction), and rarefaction (thinning out). To illustrate the way in which sound waves result as the air condenses and rarefies, the student may experiment with an elastic band. If the band is stretched tightly and given a sharp blow it will tighten, or condense, and then will thin itself out as it rarefies.

There are many sound waves in the air which we cannot hear at all. If, for example, a tuning fork were to be made to vibrate 8 times within a second, we should hear no sound. If it were made to vibrate from 12 to 15 times a second we might hear a low rumble. With increasing rapidity of vibration we should hear increasingly high tones, up to a certain point, at which we should discover that we can no longer hear because vibrations are too rapid to be heard. Some animals can hear sound which we cannot hear because their hearing receptors are adapted to higher vibrations than are the hearing receptors of man.

We measure air waves by counting the number of vibrations per second. Long ago makers of pipe organs made pipes of different lengths so as to produce vibrations of different rates. Middle C, for example, consists of air waves that have been estimated to be about four feet long which make about 256 vibrations per second. More or fewer vibrations per second would result in wave lengths of differing *pitch*. High C, for example, is our interpretation of 512 vibrations per second. The greater the number of vibrations per second the higher the pitch.

As has just been noted, the speed with which the air condenses and rarefies determines pitch. It is obvious that tones of the same pitch may differ greatly in loudness or intensity. The *intensity* of a sound is due, not primarily to the rate at which the changes are taking place in the air, but to the actual amount of disturbance.

There is a third characteristic of sound which we know as *timbre*. The timbre of a sound depends upon its purity. There is a theory sometimes advanced that the difference between noise, which we do not like, and a musical sound, which we enjoy, is essentially a matter of timbre. The musical sound is the result of air waves which follow a pattern. Noise, on the other hand, is the result of air waves which are somewhat conglomerate in

pattern. The student of music will no doubt be interested in the nature of overtones. This is illustrated in Figure 17. Resounding bodies are characterized not only by fundamental waves of condensation and rarefaction, but by two other sets of vibrations. The one (See wave number 2 in the diagram), is of less intensity but of twice the frequency of the basic tone, while 3 is still less intense and three times as rapid as the basic tone. The result

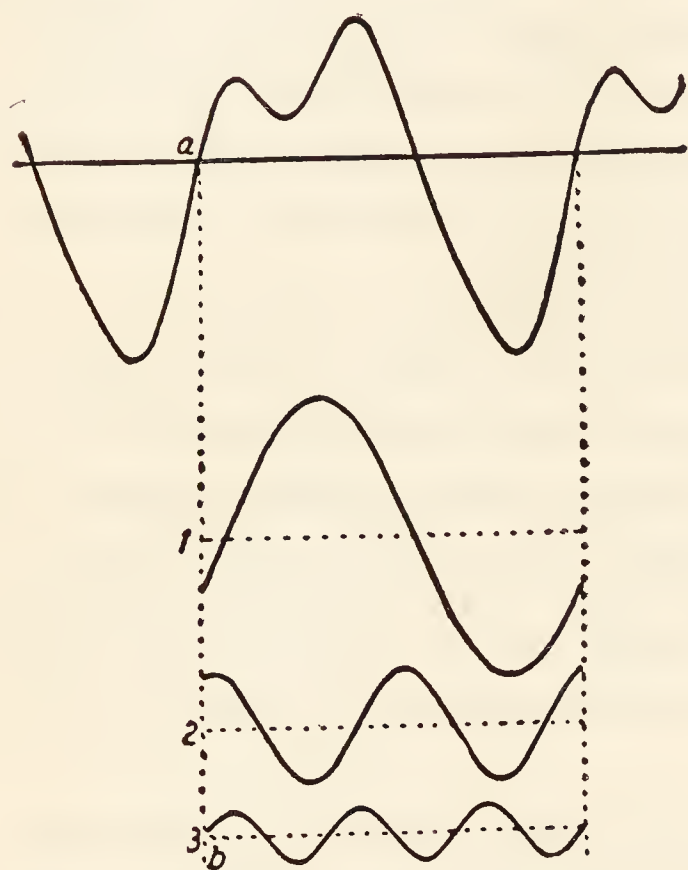


FIG. 17.—ANALYSIS OF A SOUND WAVE PRODUCED BY A VIOLIN.

The upper wave is the record of the vibration produced by the violin. Analysis shows this curve to be composed of the three vibration rates represented below it. When measured on lines parallel to *ab*, the altitude of the composite curve is the algebraic sum of the deviations of curves 1, 2, and 3 from their lines of reference (the dotted horizontal lines). (From D. C. Miller, *The Science of Musical Sounds*. By permission of The Macmillan Company, publishers.)

The light vibrations first act upon the cornea, the tough, protective, outer coat of the eyeball. Here the light rays are bent to a focus and pass through the aqueous humor to the pupil. In response to the light rays the muscles of the iris cause the pupil of the eye to dilate or to contract so as to adapt the eye to the amount of light which enters. The light rays then strike upon the lens. As the student nurse learns in her study of the anatomy of the eye,

of these three different rates of actual condensation and rarefaction of the air is shown in line *a* which suggests the vibrations which actually beat upon the inner ear.

The capacity of receptors to adapt, illustrated by the ones discussed so far, is just as apparent in the case of hearing. A person who is accustomed to sleeping in quiet rural surroundings often finds himself so distracted by city noises that he is unable to sleep. On the other hand, the city dweller who accustoms himself to the many sounds of city life sometimes finds it hard to sleep when he changes to quiet rural surroundings. To a student nurse who has become adapted to the hospital routine, the hospital undoubtedly seems to be a quiet place but to a new patient, some of the sounds may at first be disturbing.

Visual Receptors.—The organ of vision is, of course, the eye and the primary receptor is the retina of the eye. The eye functions in much the same way as a camera functions.

the shape of the lens is very significant in determining far-sightedness and near-sightedness. From the lens, the rays pass through the vitreous or gelatine-like humor to the retina where they act upon the nerve cells of the retina. The parts of the retina which are sensitive to light are the rods and cones. The rods are believed to be responsible for form vision and for discrimination of differences in low brightness. The cones are believed to be responsible for color vision and for the discrimination of high brightness.

As in the case of hearing, vision is adapted to actual energy changes in the outer environment. The stimuli for hearing are waves of sound of different lengths (frequency), volume (intensity), and purity (timbre). Waves of light coming from the sun also differ in frequency, in intensity and in purity. The *frequency*, or length, of the wave determines hue or color. This is comparable to pitch in hearing. The *amplitude* of the wave determines the relative brilliance of the light. This is to be compared to the intensity of sound waves. The purity or *saturation* of light rays is to be compared to the timbre of sound waves. Mixtures of like or unlike light rays result in saturated colors or the opposite.

The entire color spectrum is to be explained in terms of wave lengths of different frequencies. Red has fewer rays in a given distance than violet and a longer distance between crests of the waves. The intermediate colors are scaled in a corresponding order. According to one color theory the retina has specialized cells which respond to red, yellow, green and blue, and orange and violet are secondary blends for which no special sense cells exist.

The study of color vision is a science in itself. We can mention here only a few of the many interesting phenomena of color. If we were to gaze fixedly at a yellow light and then were to close the eyes or look at a neutral surface we should expect to see a blue or purple color. This is what we call an after-image. For every color toward the end of the spectrum, (red to violet), there is another color at the opposite end which tends to neutralize it and to make gray. This is the phenomenon of complementary colors.

There are various theories offered to explain color-blindness, but the simplest is probably the one that is most trustworthy. It merely states that some persons lack the capacity for perceiving colors such as red or green. It is believed that this is due to a structural defect and cannot be remedied by training. Fortunately the incidence of color-blindness is small, since less than 4 per cent of the male and less than half of 1 per cent of the female population suffer from this defect.² Color-blind persons can sometimes distinguish the difference between colors by the difference in their brightness.

Most persons in going into a dark theater from bright daylight, find it hard to adapt immediately to darkness. There are some persons who ex-

perience acute difficulty in adapting to darkness after being in the light. In some instances this is believed to be due to some abnormality in the functioning of the rods in the retina. Another type of night-blindness is believed to be due to a deficiency of vitamin A. Experiments suggest that both the rods and the cones are involved in this type of night-blindness.³ As a general rule, the eyes, like the other receptors, show remarkable capacity for adapting.

Proprioceptors.—Up to this point we have been considering exteroceptors, or receiving organs which keep us in touch with the outer world. Receptors which are adapted to changes within the organism are called *proprioceptors*. If we had no such receptors we should be unaware of the numerous shifts in position which characterize our general behavior and we should have no sense of equilibrium or balance.

Kinesthetic Receptors.—Located in the the muscles, tendons and joints are receptor organs which keep us in touch with activities of the body that are controlled by the striated muscles. The stimuli to which these sense organs are adapted are movements of muscles, joints and tendons, and muscle tension. Without a kinesthetic sense we should be unable to organize and to control our motor behavior. One way of recognizing the function of these sense organs is to consider what happens when kinesthetic centers are not functioning. In one instance, reported by Dashiell, an eight-year-old girl appeared to be making no use of kinesthetic stimulation.² She depended upon vision to guide her in her motor reactions. This tendency seemed to date from an illness in infancy since which time she had tried to substitute vision for the kinesthetic sense which normal persons use. She could not walk without stumbling, and was extremely awkward in all her movements. When a large collar was put around her neck so that she could not see her feet or use her eyes to guide many of her motions, she was practically helpless. Her final recovery was due to a program in which she was blindfolded and trained to depend upon the kinesthetic sense organs which normally keep everyone in touch with the movements of his body.

In driving a car, playing golf, making a bed or in any complex motor act we depend upon kinesthetic receptors. We do not look to see whether the arm is in the right position or whether the foot has been lifted just as far as might be desired. Consider what would be our plight if, in the ordinary act of walking or of dancing, it were necessary for us to measure each step and to appraise our progress with the eye.

Receptors For Equilibrium.—Somewhat like the kinesthetic receptors, in that they serve to keep us aware of bodily conditions, are the sense organs for equilibrium. These are located in the semi-circular canals of the inner

ear. When they are excessively stimulated we become dizzy, or lose our *sense of balance*. Tests of the ability to maintain a sense of balance suggest that some persons have a better sense of balance than others. Such tests play an important part in the selection of men who are to be given training as aviators.

Interoceptors.—Our survey of receptors would be incomplete without mention of the many sense organs which are located throughout the viscera of the body. We do not know the precise nature of these receptors, but we do know that they respond to pronounced changes in the normal functioning of the organism. When digestion, circulation and other basic processes are going on normally these sense organs are apparently not stimulated. As soon as something goes wrong with bodily functioning our receptors make it possible for us to know about the change. Certain of the interoceptors are being stimulated when we have the familiar experiences of warmth, cold, touch and pain, coming from areas other than the skin. Hunger, thirst, sex activity, fatigue, disgust and so on are responses to the stimulation of interoceptors. Vigorous contraction of the walls of the empty stomach bring about a sensation which we know as *hunger*. When the mucous lining at the back of the throat becomes very dry we experience *thirst*. Similarly, nausea, suffocation and other well-known organic symptoms are to be traced to receptors within the organism.

Earlier in the chapter we stated three principles of behavior: behavior is not haphazard, behavior is always in response to something and we react to total situations. The specialized nature of receiving mechanisms makes it possible for us to react to change in the internal and external environment. We do not just happen to respond. The variety of sense organs permits us to respond to many different kinds of stimuli. The human organism is so complex that sense organs can seldom operate singly. We react to total situations in which many senses are stimulated simultaneously.

THE CENTRAL NERVOUS SYSTEM

We have considered organs of response and receptor organs but we have not, as yet, discussed the intricate mechanism by means of which impulses received through the sense organs are transmitted to mechanisms of response. Both receiving and responding organs are, as we have seen, complex in nature. The connecting mechanism is also very complex. If we had nothing more than a mechanism for connecting each *isolated stimulus* with each *fragmentary response* we should be in a sorry plight. The central nervous system is often conceived as the switchboard of a telephone exchange which

makes connection between incoming calls and the persons to whom the calls are directed, but the central nervous system does something which no switchboard operator can do. It *integrates* and *organizes* responses not to one stimulus or one incoming call but to many. To pursue the analogy a bit further, the central nervous system operates as a switchboard might operate if it received many calls at the same time, connected the many calls with a number of persons, at the same time, and organized all incoming calls so that each person could hear all of the calls at once without becoming confused. We should need to add that all of the persons receiving the many calls at the same time would respond as one person. The central nervous system is sometimes called "the great central adjuster" because it integrates and organizes behavior.

The central nervous system consists of the brain and spinal cord. It is infinitely complex in structure and in function. For this reason the anatomy and functioning of the brain and spinal cord cannot be discussed here in detail. We shall, however, find it desirable to review the gross structure of the central system briefly, in order that we may appreciate how the human organism functions as a whole. It is with this purpose in view that we list the parts of the brain and suggest how the various parts interact in adapting man to his environment.

The Brain.—The brain is, of course, the most important and the most intricate part of the central nervous system. In a simplified analysis of its various functions the parts of the brain to be considered are: two hemispheres, a stem which connects the hemispheres with the spinal cord, and the cerebellum.

The Cerebral Hemispheres.—The cerebral hemispheres occupy a large part of the cranial cavity. The cortex or covering of the hemispheres is the part which is of greatest interest to the psychologist, because it is in the over-development of the cerebral cortex that higher animals are distinguished from lower. In man the cortex constitutes about one-half of the weight of the entire nervous system. Although it is crowded into a relatively small space within the skull, the area of the cortex is much larger than the area of the skull because the cortex contains deep fissures (sulci) and ridges (gyri). It contains literally billions of nerve cells or neurons which connect with other centers of the brain, with one another, with the sense organs and with effectors or responding mechanisms. Because of the intricate connections made possible in the cerebral cortex, we are able to think, to remember, to see relationships, to plan, to imagine and to carry on all the activities which are familiarly known as "mental" activities.

If the cerebral hemispheres are cut across horizontally, just above the

partly divided halves of the upper brain stem, a cavity known as the third ventricle will be seen. In the lower parts of the walls and on the floor of this cavity are nuclei which are of great psychological significance. These are the hypothalamic nuclei which, with the associated fiber tracts constitute the *hypothalamus*. Above the hypothalamus lies a lower brain center known as the *thalamus*. (See Figure 18.)

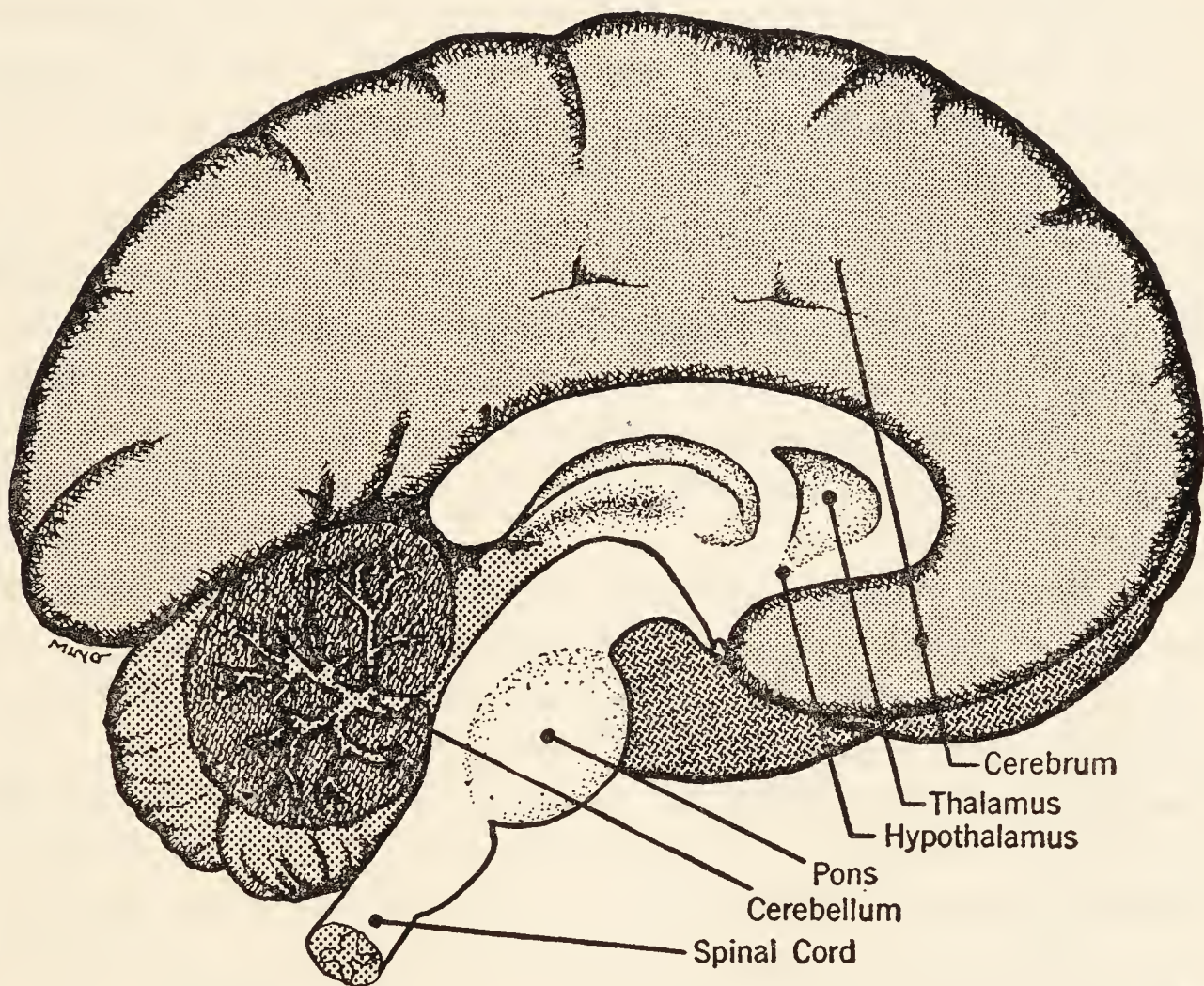


FIG. 18.—THALAMUS, HYPOTHALAMUS, PONS AND SPINAL CORD.

The thalamus is an important integrating center containing many different nuclei. It serves as a relay station between the cortex and lower centers of the brain. It connects with both the cerebellum and the frontal lobes, besides serving as a major relay station for fibers connected with sense organs in the skin and muscles. The thalamus is believed to serve as a center for coordinating sensory impulses. It is also believed that it may, in some way, enter into the affective state of an experience, that is to say, the pleasantness or the unpleasantness of certain experiences may be related to activity in the thalamus.

The hypothalamus is especially significant psychologically in a study of emotional behavior. The precise nature of its connections with the autonomic nervous system is not known, but experimental studies indicate that the hypothalamus plays a significant role in the functioning of the autonomic nervous system.⁴

The Brain Stem.—The brain stem, which serves as a center for various reflexes and which relays sensory and motor impulses, connects the cerebral hemispheres with the spinal cord.

The upper part of the brain stem, or *midbrain*, not only serves as a pathway for the conduction of impulses but as a reflex center for vision, hearing, and for the control of certain adjustive movements, such as turning the head in response to a sound or to visual stimuli. It enters into the control of automatic aspects of posture and balance.

The middle division of the brain stem, the *pons*, does not appear to have unusual psychological significance. Its function seems to be the general function of the brain stem, the relaying of sensory and motor impulses.

The third division of the brain stem, the *medulla*, which connects the brain and spinal cord *directly*, in addition to serving as a channel through which sensory and motor impulses pass, controls the essential life processes of the body.

Cerebellum.—A third part of the brain, the *cerebellum*, lies below the posterior portion of the cerebrum and posterior to the upper part of the brain stem. It is concerned with equilibrium and the smoothing and coordinating of impulses leading to muscular movement.

The Spinal Cord.—The spinal cord is a switching center for relaying sensory and motor impulses. It is much less complex than the brain. It relays impulses from sense organs toward the brain and from the brain toward the motor mechanism. It also is a center for reflex activities. It makes direct connection between sensory and motor aspects of simple reflexes.

AUTONOMIC NERVOUS SYSTEM

The nervous system as a whole consists of the *central system*, *cranio-spinal* connections with the body-walls by way of cranial and spinal nerves, and *autonomic* connections with the viscera by way of fibers of the sympathetic and parasympathetic divisions. The nervous system has two basic functions: one, to connect sense organs by way of the brain and spinal cord, with the striated muscles, and the other to direct the activities of viscera, blood vessels and glands. As a rule, when we refer to activities that involve reflex action, acts of skill, thinking, remembering, imagining, planning

and other *mental* activities we are concerned with the activities of the central nervous system and connections made by cranial and spinal nerves. When we refer to digestion, blood pressure and similar basic organic activities we are primarily concerned with connections made by way of the fibers of the parasympathetic and sympathetic divisions of the autonomic system.

The action of the autonomic division of the nervous system is of great psychological significance, because *body tensions* are psychologically significant in a study of emotion. We cannot appreciate the interplay between organic tensions and emotional behavior without some knowledge of the functioning of the autonomic nervous system and related activities of smooth muscles and glands. A detailed analysis of autonomic reactions, however, would take us far beyond the scope of this text. The interaction of the various organic systems is exceedingly complex and involves interplay of glandular secretions, changes in blood sugar, in respiration, circulation, blood pressure, and so on. The complex functions of the various systems activated by the autonomic nervous system is the subject of extensive present day research, some of which is controversial.*

The student of psychology, and especially the student nurse to whom the functioning of the autonomic nervous system is presented in more detail elsewhere, can profitably consider a greatly oversimplified statement regarding the functioning of the autonomic nervous system as it relates to behavior. It is important that the oversimplification be recognized as such and that the student appreciate the limitations of the analysis that follows.

Divisions of the Autonomic System.—The autonomic system has two divisions: the *parasympathetic* or cranio-sacral division and the *sympathetic* or thoracolumbar. The parasympathetic originates in the midbrain and medulla and in the sacral part of the spinal cord. (See Figure 19.) The sympathetic is connected with the thoracolumbar division of the spinal cord. Both sympathetic and parasympathetic fibers connect with visceral organs. Although it is not true that the functions of the two divisions are independent, they are to some extent unique. The parasympathetic division, when activated, tends to keep the organism functioning placidly and maintains the normality of vegetative processes. The sympathetic system, on the other hand, tends to throw the organism into a state of tension. In general, the parasympathetic system builds up the body and conserves bodily resources. It increases heart beat, for instance, and lowers blood pressure, reducing the use of fuels in the body.

* Note: For one modern point of view the student is referred to: Gellhorn, E. *Autonomic Regulations: Their Significance for Physiology, Psychology and Neuropsychiatry*, New York: Interscience Publishers, 1943.

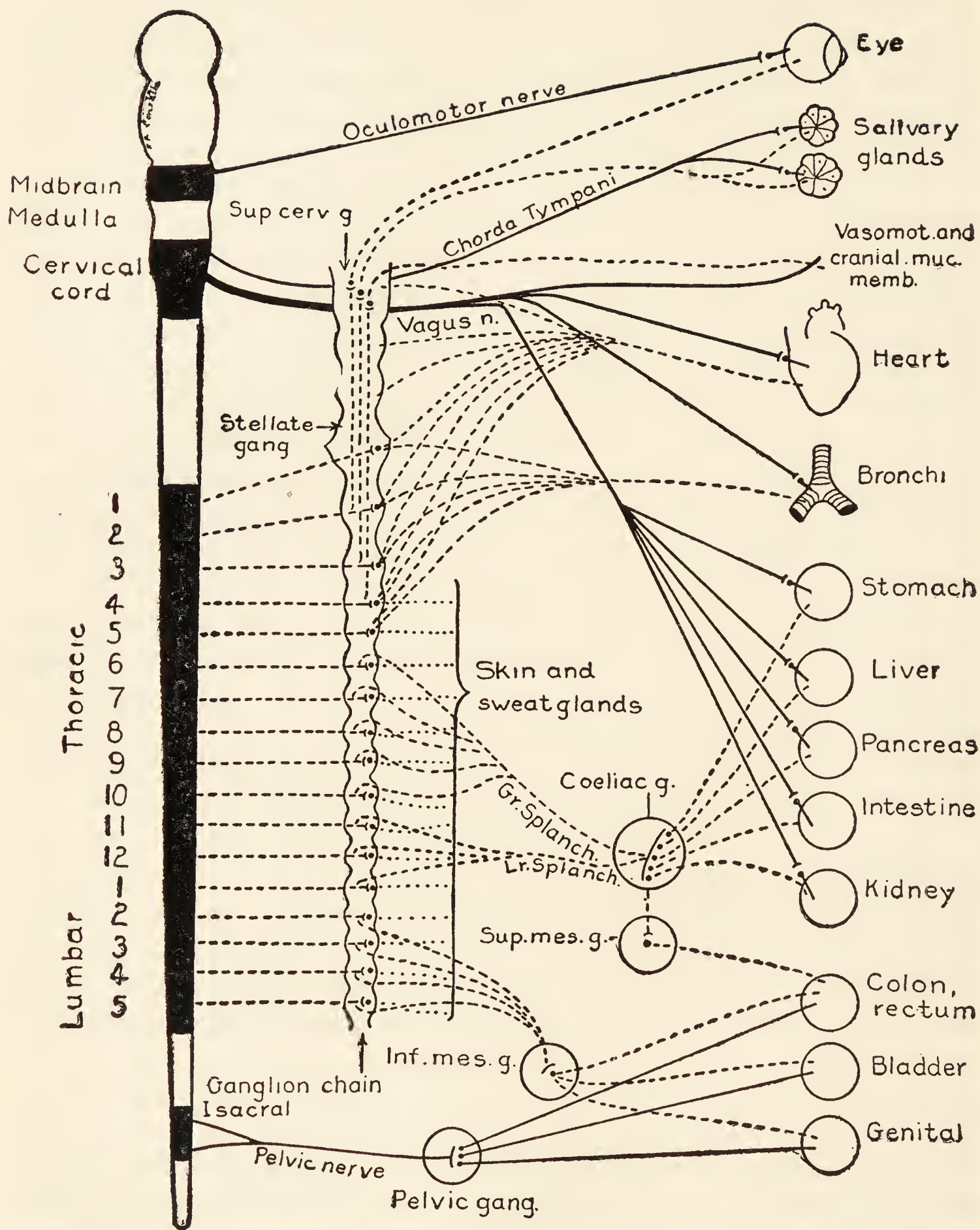


FIG. 19.—SCHEMATIC DRAWING ILLUSTRATING THE COMPONENTS OF THE AUTONOMIC NERVOUS SYSTEM.

The solid black lines indicate the craniosacral or parasympathetic nerves, whereas the broken lines indicate the thoracolumbar or sympathetic nerves. (Modified from Kuntz, from Cole and Elman, *Textbook of General Surgery*, D. Appleton-Century Company, New York.)

The functioning of the two systems is to some extent a matter of balance. This is an important point for the nurse to keep in mind, because the balance between physical and emotional well-being probably depends upon the delicate balance between the parasympathetic and sympathetic divisions of the autonomic system.

An Emergency Mechanism.—One theory regarding the action of the sympathetic division of the autonomic nervous system suggests that it is an emergency mechanism.⁵ Under certain conditions, activity in this division results in changes which make the organism ready for action. We have numerous reports of deeds of unusual strength under stress of intense emotion. Men have been known to carry great weights or to continue to expend energy far beyond normal expectations when excited or extremely angry.

Bodily Changes Related To Sympathetic Activity.—Through the activity of the adrenal glands, which are excited by the action of the sympathetic system, the changes which take place are such as to prepare the organism for activity. The pupils are dilated, the blood is sent to the muscles and the brain, the heart beat is accelerated, gastric and intestinal activities are lessened. With increased secretion of adrenalin the amount of sugar in the blood is increased and tissue metabolism is also increased. (See pages 74-75.) The nurse who recognizes a patient's need for activity, when emotionally disturbed will discover possibilities of relief which might have been overlooked if she had not been aware of this characteristic of organic behavior.

The changes just mentioned are initiated partially, at least, by increased activity of the adrenal glands. Adrenalin, the secretion of these glands, activates other glands and changes the very delicate balance which characterizes the functioning of the endocrine glands when a person is placid. Because of the connection between the discharges of the sympathetic division of the nervous system and secretion of the adrenal glands, their joint activity is sometimes designated as *sympathetico-adrenal* excitation. Sympathetic excitation may also involve the vago-insulin system. This is suggested in changes in blood sugar. When blood sugar is low (hypoglycemia) the sympathetic is activated and an increase in blood sugar results. When, on the other hand, the sympathetic has been so active under emotional stress as to greatly increase blood sugar the vago-insulin system acts to reduce sugar content.

Cortical Activity, the Hypothalamus and the Autonomic System.—In listing the divisions of the central nervous system, mention was made of the fact that the thalamus and hypothalamus are significant in emotional behavior. The hypothalamus, which, as we noted, is a part of

the central nervous system, seems also to be an essential of the autonomic system. It connects indirectly with the frontal area of the cerebrum and also with the region of the pituitary gland, the master gland of the endocrine system. It is possible that the hypothalamus is also related in some way to the activity of the thyroid gland. It is believed that the hypothalamus is active under conditions of emotional stress and strain. On the physiological side, this is evidenced by organic changes such as increased perspiration, increased rapidity of heart beat, rise in blood pressure and so forth.

The interaction of centers in the hypothalamus and centers in the frontal lobe of the cortex is suggested by the fact that we can bring about certain organic changes such as have just been mentioned, by *thinking* about an emotional experience.⁴ It may become possible at some time to trace a connection between excessive activity of the hypothalamus and the ability of some persons to deliberately "work themselves up" to a state of great emotional tension with resultant interference with placid or vegetative activity of the organism.

REACTIONS OF THE NERVOUS SYSTEM AS A WHOLE

In our brief survey of the human organism, we have noted the *complexity of stimuli* to which we are adapted to respond, the *integrating activity* of the central nervous system and the *varied nature of organized responses* which are made possible. The reaction of the nervous system as a whole is illustrated in the behavior of babies and young children to the light situations discussed earlier in the chapter.

A Reflex Reaction.—The flashing of the light brings about a change in the light waves which beat upon the child's eyes. The eye, a receptor adapted to this type of energy change, connects with a nerve cell or neuron. This neuron which receives the impulse is a *sensory* or *afferent* neuron. It carries the impulse to the spinal cord and there it activates other *connecting* neurons, which carry the impulse to the *motor* neurons which transmit the impulse to the muscles of the iris which cause the pupils of the eye to contract.*

* Note: A neural impulse implies an actual physical change in the activity of neurons. According to the best knowledge that we have, these changes are both electrical and chemical in nature. As one neuron contacts another the impulse is in some respects like an electric current which is carried along the nerve fibers at varying rates. It is believed also that there is a chemical discharge at the point of contact of the neurons. We wish to remind the student, at this point, that the contact is probably not actual. This hypothetical point of contact is the *synapse* to which frequent mention is made in discussions of the physiological basis of learning.

Increased Bodily Activity.—The general bodily activity of the young baby in the experimental situation is initiated in the same way that the pupillary reflex is initiated,—that is, by way of light rays which beat upon the eye and cause changes in the activity of receiving and connecting neurons. The connection with the muscles involved in general bodily activity is probably made in the spinal cord. It is possible that there is also some change in activity in the thalamus, if the baby can be said to experience a *sensation* from the light.

Controlled Motor Responses.—The activity of turning the head, initiated by the light, involves the use of higher centers than those making general motor activity possible. Having reached the spinal cord the impulse, in this instance, is carried up to the brain stem. There, in the medulla, the lower part of the brain stem, the impulse is relayed to the thalamus and from there to the primary sense areas for vision in the cortex. New impulses are sent out, by way of the motor area of the brain, and finally to the striated muscles involved in turning the head. If the movement were finely coordinated, there would also be activity in the cerebellum.

Intellectual Responses.—The child who moves away from the light is stimulated, first of all by the change in the light waves which beat upon his eye. The pathway of the impulse to the central nervous system involves the way stations functioning in the illustration just mentioned and also involves millions of nerve fibers which relay impulses from one part of the cortex to another. Before turning his back to the light the child makes a “thinking” response of some kind. In addition to this, he makes finely coordinated and controlled movements which involve the motor areas of the brain and the cerebellum.

Emotional Reactions.—The child who shows fear in response to the flashlight makes use of all the areas so far mentioned. He responds to the light, the experimenter and to other stimuli arising from visceral tensions which accompany states of strong emotion. The fibers and ganglia of the sympathetic nervous system are operating, as impulses are carried between sense organs in the viscera and higher centers of the brain. The smooth muscles and glands also enter into the picture of his total behavior.

Psychological Implications.—Our review of the receptors or sense organs and our illustrative instances of human responses, have indicated that *behavior is never haphazard*. This principle is one which the student nurse will recognize more and more as she develops insight into human nature. No one ever *just happens* to do or to believe anything. There is always a stimulus to be found.

We have observed, also, that *behavior is not fragmentary*. The response

mechanisms do not act separately. In any attempt that the student nurse may make to interpret the behavior of associates and patients she will, no doubt, have many opportunities to discover that this principle is operating. In overt, or readily observed behavior, she may often discover symptoms of profound reactions that are not readily seen.

In our discussion of connecting mechanisms in the brain and spinal cord, we have noticed the complexity of stimuli to which we are adapted to respond, and the integrated, organized nature of our responses. The nature of the central nervous system makes it possible for us to respond to stimuli, not one by one, but as a complex whole. *We react to total situations.* A recognition of this principle is of the greatest importance in the understanding of human behavior. The nurse herself is a part of the total situation to which her patients or other associates respond. When she modifies her behavior in any way whatsoever she changes the situation.

SOME RESEARCH IN PROGRESS

The story of the human organism, as it has been sketched, is greatly abbreviated. Even if no limits were placed upon the time of the student nurse and the size of her textbook in psychology, the complete story could still not be told. Much must remain untold, as neurologists and psychologists, working together, piece together more and more new knowledge about man's amazing mechanism. One very significant field of research is the localization of specific functions in the various parts of the brain. Another field which is being explored is the significance of human "brain waves."

Localization.—A conventional map of the human brain divides the cerebral cortex into functional areas. Some of the areas most commonly mentioned in discussions of localization are indicated in Figure 20. There is more agreement about the specialized nature of motor and primary sensory areas than about other functional divisions.

For *direct*, controlled experiment in the field, it is necessary to depend upon animals. Evidence from these experiments must, therefore, be regarded as only indirect evidence of localized functions in the human brain. A common method of studying specific functions of certain areas of the cortex of animals is to stimulate various parts and to record resulting behavior. Another method of studying the problem is to observe the reactions of persons suffering from certain types of brain injury and to attempt to trace relationships between the injury and certain characteristics of behavior.

Experiments with animals tend to support the view that there are no *specific* areas of the cortex devoted to the "higher processes". Damage to

prefrontal areas has sometimes resulted in a loss of function which is only temporary. Young animals seem to be more capable than older ones of making a quick recovery and of carrying on almost normally without certain areas which have been destroyed. While this does not prove that there are no specialized areas for the more complex mental processes it does suggest that when one part of the brain is injured other parts seem to be capable of taking over.

Studies of persons suffering from head injury also support the theory that areas of the brain while somewhat specialized are not as highly specialized as was once believed.* There is reason to believe that the amount of damage to the cortex is more significant than the location of the injury. It seems that a considerable area of the cortex can be removed without seriously affecting behavior *permanently*. Perhaps, as investigations of localization continue, it may be discovered that one of the most remarkable characteristics of the human brain is its adaptability.

Cerebral Dominance.—One group of experiments which the student nurse might watch with great interest pertains to cerebral dom-

inance. Nearly everyone prefers one side of the body to the other. This is evidenced most clearly in the preferential use of the right or the left hand. In the case of persons who prefer the right side of the body, the left hemisphere of the brain, according to the theory of dominance, is the dominant hemisphere. In the case of a left handed person the right hemisphere is presumably dominant.

Several recent experiments seem to support the theory of hemispheric dominance.^{6, 7} The theory of hemispheric dominance, as one explanation of

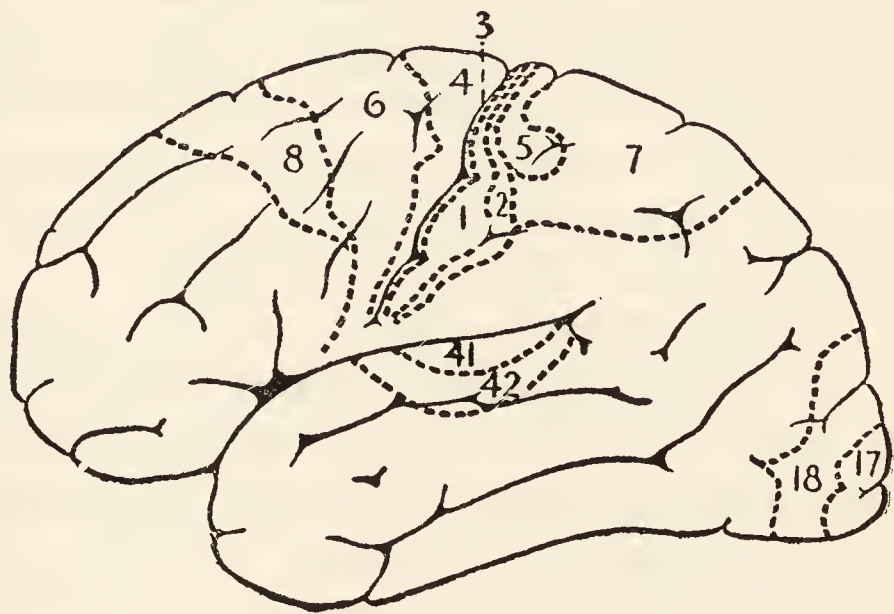


FIG. 20.—LATERAL VIEW OF THE LEFT CEREBRAL HEMISPHERE, SHOWING THE APPROXIMATE LIMITS OF THE MORE COMMONLY REFERRED TO BRODMANN AREAS.

Brodmann areas: 4, motor projection; 6, pre-motor; 3, 1, 2, sensory projection, especially touch; 5, 7, touch and kinesthetic; 8, (one part), eye control; 17, 18, visual; 41, 42, hearing (Illustration from Hathaway, *Physiological Psychology*, D. Appleton-Century Company, New York.)

* Note: For reports of research leading to this point of view see numerous articles by K. S. Lashley.

stuttering, is but one of various theories that have been propounded to explain this tendency. Some maintain that in the case of stutterers the motor areas are profoundly disturbed.⁸ Another theory suggests that stutterers suffer from a more generalized lowering of functions essential to speech in many brain areas.⁹ Other studies suggest that stuttering is primarily psychological in nature and due to factors other than cerebral peculiarity.

If many more researches should indicate that stuttering is related to cerebral dominance, an answer may be found to the question which is so frequently raised as to the effect upon speech of a forced change from left-handedness to right-handedness. When a child who habitually uses his left hand in preference to his right is forced to change, he sometimes begins to stutter. This is by no means the rule, however, and because so little has been proved about a possible organic basis for some cases of stuttering, research in the field of cerebral dominance may be followed with interest by all those who deal directly or indirectly with children.

“Brain Waves”.—One of the most significant of recent developments in the field of neurological research has been the recent extension of interest in “brain waves”. It is now possible to obtain a record of the activity of the brain itself. By means of a device which includes electrodes which are placed upon the scalp, and a recording device, it is possible to obtain a tracing of changes in the activity of neurons in the cortex. The recording is known as an electroencephalogram, commonly abbreviated, EEG. The electrodes are attached to the scalp above different areas of the cortex and the waves that are recorded differ from area to area.

Several types of waves have been discovered; the two main waves are the alpha and the beta. The alpha waves are large and rhythmic and are most readily seen in the case of patients who are quiet and relaxed. The alpha wave has been recorded in the case of very young babies.¹⁰ The beta waves are smaller and faster than the alpha waves. Both types of waves have been recorded in most regions of the skull, but the beta waves (the smaller and more rapid) are most often found in the frontal region of the cortex. The waves vary with the activity of the subject (See Figure 21). A change is to be noted when a resting subject opens his eyes. The waves of a sleeping person are different from those of the same person when he is awake. Pathological conditions are also indicated by different waves.

Changes in the electrical activity of the brain can also be traced to emotional conditions. A person who is very much disturbed emotionally will show waves that differ from those of a person who is more peaceful. It is possible that, at some future date, an electrical recording of brain activity may prove more efficient than present day “lie detectors” as evidence of

emotional disturbance due to a feeling of guilt. In experimental situations it has been shown that a subject who is working problems in mental arithmetic can bring about a change in the alpha waves which are large and rhythmic under conditions of calm.

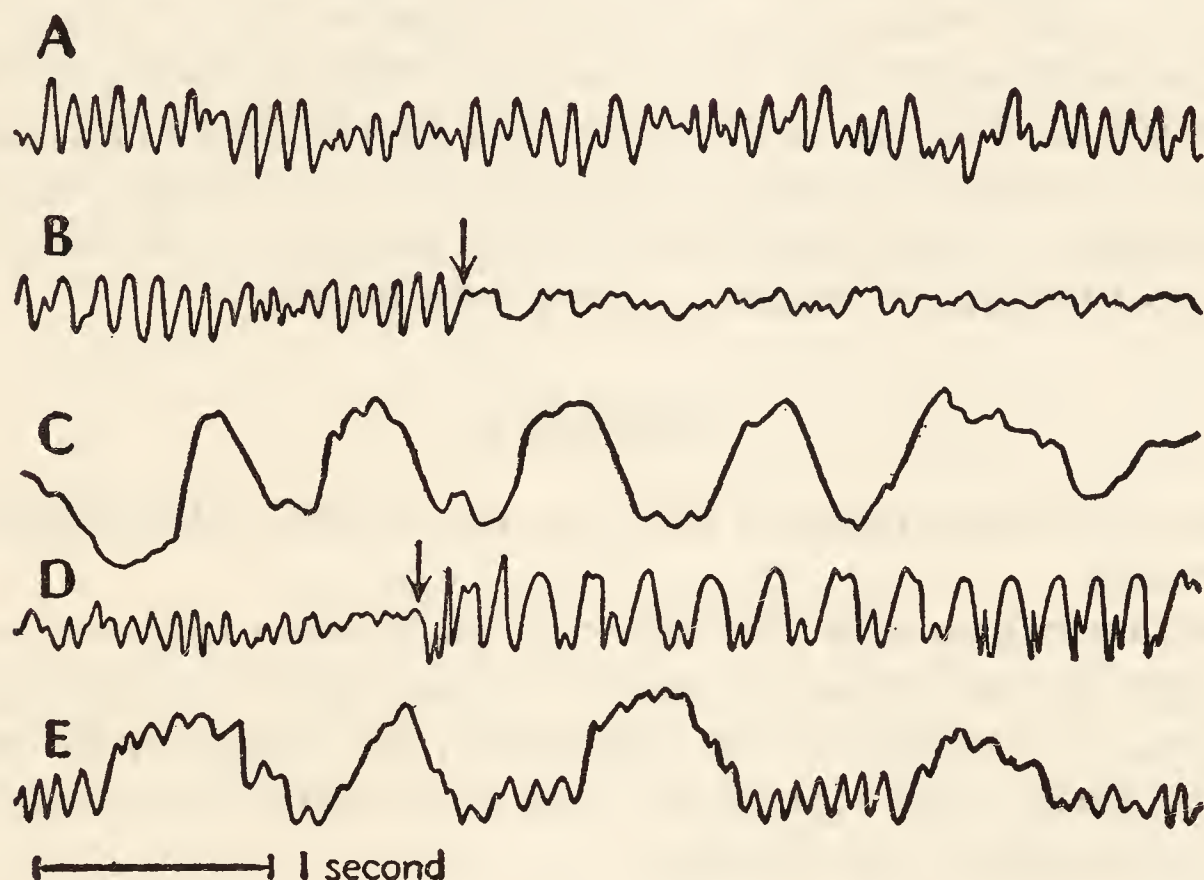


FIG. 21.—VARIOUS TYPES OF ELECTROENCEPHALOGRAPHIC WAVES.

The normal, resting 10-12 per second alpha type wave is illustrated in *A*. In *B* the eyes were opened at the point marked by the arrow which resulted in a cessation of the alpha frequency, leaving irregular small higher frequency waves (beta waves). *C* and *E* represent large, slow waves of the delta type. Those of *C* were obtained from a normal patient during a deep sleep and *E* was obtained from an electrode located over a tumor in the cortex. The wave and spike type of record in *D* occurs chiefly during a petit mal epileptic attack, one of which started at the arrow. (From Hathaway, *Physiological Psychology*, D. Appleton-Century Company, New York.)

Electrical recordings have proved useful in the diagnosis of certain pathological conditions. Under certain conditions an epileptic may have waves that are too slow or too fast, or perhaps both, in alternating sequence. There are striking changes preceding and during epileptic seizures. Some attempts have been made to detect mental deficiency by means of the EEG, but results of these experiments have not been at all conclusive.

EEG recordings are used sometimes in the selection of personnel. They have been used in the selection of recruits at a naval training station.¹¹ In one instance the recordings were found to be helpful in 63 per cent of cases. It is recorded that they were of some value in indicating certain

conditions, including epilepsy, migraine, head injuries, organic feeble-mindedness, somnambulism, and enuresis.

The nurse in her contact with patients, often deals with persons who are suffering from organic lesions or from functional disorders of the nervous system. The student nurse will have an opportunity, at a later date in her training, to study various types of abnormal behavior. She will, undoubtedly, find reports of research in the field of neurology both stimulating and helpful.

The last small section of the chapter has been devoted to problems pertaining to those whose neurological functioning is not normal. The student should perhaps be reminded that the major purpose of this text and the emphasis of the present chapter is upon normal behavior.

SUMMARY

Behavior includes responses which are not ordinarily observable, as well as overt acts.

Certain principles seem to be illustrated in all human reactions: we never *just happen* to react, whatever reactions we may make, it is in *response to something*; our responses are not fragmentary, but usually involve reactions of various kinds; we do not respond to just one stimulus, but to many stimuli which constitute the total situation.

Response mechanisms are striated and smooth muscles, duct and endocrine glands. Smooth muscles and endocrine glands are psychologically interesting because of their indirect influence upon overt behavior.

The activity of response mechanisms is such that behavior cannot be fragmentary; striated and smooth muscles, duct and endocrine glands act together.

We have specialized receptors for all sorts of stimuli. Exteroceptors keep us in touch with the external world; proprioceptors make it possible for us to be aware of equilibrium and movement; interoceptors receive stimuli from within the organism.

Our equipment for receiving stimuli makes it impossible for behavior to be haphazard and makes it possible for us to respond to many stimuli at once.

The central nervous system consists of the brain and spinal cord. It is the connecting mechanism by means of which sensory impulses are transmitted to the various mechanisms of response. It serves to make stimuli meaningful.

The autonomic division of the nervous system is involved in organic activities and is especially interesting to the psychologist because of the

relation between autonomic activities and behavior which we label *emotional*.

The two divisions of the autonomic, the *parasympathetic* (craniosacral), and the *sympathetic* (thoracolumbar), have a balanced relationship. The parasympathetic tends to maintain the normality of vegetative processes; the sympathetic, when highly activated, tends to throw the organism into a state of tension.

The nervous system reacts as a whole. It makes it possible for us to respond to present stimuli in the light of past experiences. It integrates activities and makes it possible for complex situations to have meaning. It makes it possible for us to react selectively to *whole situations* in which we can see the relatedness of complex stimuli. It makes learning possible.

The complete story of the human organism cannot be told. In the laboratories of present day scientists new chapters are being written. What the scientists of the future will discover about man's amazing mechanism we cannot predict.

SUGGESTED ACTIVITIES

1. **Experiment to discover whether response may be fragmentary.** It is suggested that students work in pairs, each one serving as a subject for the other. Have subject sit with knees crossed, in a relaxed position. Elicit the patellar reflex (by striking the relaxed knee with the side of the hand), under the following conditions:

(1) After asking subject to concentrate her attention upon something in the room.

(2) After asking subject to attend closely while you elicit the reflex.

(3) After asking her to clasp her hands firmly, turn her elbows out and to pull hard.

Record any change in the reflex response which you may observe. Discuss in the group.

2. **Experiment to discover whether responses just happen.** Continue to work in pairs. Choose any stimulus word that you like and tell the subject to think about it for two minutes. At the end of two minutes, ask her to tell you what she is thinking about. See if she can trace her "line of thought," step by step, from the stimulus word which you gave her. Report to group.

3. **Discussion of total situations.** Consider several ways in which you might respond to the following situations and try to discover why you may respond differently under different conditions.

(1) As a student nurse you answer the signal of a patient who looks very glum.

(2) You are requested to get a room ready for a new patient.

(3) Answering a signal you find a patient in need of much immediate attention.

(4) Your instructor tells you that, "on the whole" you are doing well.

4. **Experiment to illustrate direct reaction to stimuli.** Stand in a doorway with the backs of your hands pressed tightly against the sides of the doorway. Continue to press against the sides while you count 20. Step out from the doorway. Have you elicited a motor response?

5. **Discussion.** What sensory stimuli can the nurse use to help a patient in his adjustment? What sensory stimuli to which the nurse may have become accustomed might prove annoying to a patient?

6. **Notebook suggestion.** Keep a record of very subtle ways in which various patients indicate that they are emotionally disturbed.

7. **Notebook suggestion and an experiment.** With one or more children of your acquaintance, outside the hospital, try an experiment similar to the flash light experiment discussed in the chapter. Record just what you can observe or hear. Try to record the different response mechanisms which the child uses.

SUGGESTED READING

Anatomy text books. Review nervous system.

Hathaway, S. R. *Physiological Psychology*, New York: D. Appleton-Century Co., 1942.

For a brief survey of the nervous system, read Chapter I. Studies of localization of brain functions are reported in Chapter V. Read Chapter VI for a discussion of the thalamus and hypothalamus. Chemical effects on behavior are discussed in Chapter X and the physiological basis of emotion in Chapter XI.

Morgan, Clifford. *Physiological Psychology*, New York: McGraw-Hill Book Co., Inc., 1943.

Read Chapter XVII on Emotion.

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A discussion of endocrines in relation to malnutrition.

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- ⁸ KOPP, H. "The Relationship of Stuttering to Motor Disturbances," *Nervous Child*, 1943, 2, 107-116.
- ⁹ FREESTONE, N. W. "An Electro-Encephalographic Study on the Moment of Stuttering," *Speech Monogr.*, 1942, 9, 28-60.
- ¹⁰ LINDSLEY, Donald B., in VALENTINE, Willard L. *Experimental Foundations of General Psychology*, New York: Farrar and Rinehart, 1941, pp. 409-412.
- ¹¹ SOLOMON, P., HARRIS, H. I., WITTON, C. L., and HUNT, W. A. "Electroencephalography in the Selection of Naval Recruits," *Nav. Med. Bull.*, Washington, 1943, 41, 1310-1317.

Chapter VI

MAINSPRINGS OF ACTION

There is no aspect of psychology that is of more practical value to the student nurse than a study of *human motivation*. We cannot even begin to appreciate a person's behavior without inquiring into his motives. The student of human behavior, like the doctor and nurse, is alert to symptoms; he learns to interpret behavior as symptomatic of underlying motives. The student nurse will discover, as she becomes increasingly competent in recognizing physiological symptoms, that she too can become alert to some of the less obvious indications of common human wants and needs.

Early man was interested in interpreting the behavior of his fellows. He turned to the supernatural to find *driving forces* that impelled men to behave in certain ways. Later, in the laboratory, scientists were able to show that various stimuli and responses were linked together. They could predict *what* a person might do, but they could not say *why* he was likely to respond in certain ways. Laboratory scientists could not discover universal mainsprings of action, so psychologists fell back upon theoretical explanations of common ways of behaving. They assumed that there was a parallel between instincts, as observed in lower forms of life, and certain characteristic human reactions. They believed that many human ways of behaving were *instinctive*, in somewhat the same way that mating of birds, nest building and caring for the young are said to be instinctive. Man was said to have instincts: to collect, for example, to fight, to be self-assertive, to be self-abusive, to be gregarious, and to do many other things. In spite of the fact that no two persons collect or fight or are self-assertive, self-abusive or gregarious in the same way, such behavior was nevertheless regarded as instinctive.

Later, as the science of psychology progressed, scientists became dissatisfied with an explanation of behavior in terms of *inherited patterns of activity*. Several criteria of instinct were proposed: that the behavior be universal or common to all persons, that it show itself without any opportunity for learning, that it be a clean-cut and precise type of response and that it be a response to a definite and limited stimulus. When these criteria were applied, complex and social ways of behaving could no longer be attributed

to instinct, because they could not measure up to the last two specifications. This, naturally, led to the theory that we have no inherited ways of behaving except relatively simple physiological reflexes. The reflex theory of behavior did not, however, furnish a basis for explaining underlying motives which seem to be more or less universal.

Present day psychologists who are looking for common motives to behavior, find the older instinct theory of inherited patterns of behavior confusing and the later theory of simple reflex behavior inadequate. The concern of psychologists today is with common human *needs*. The emphasis of modern study is upon *adjustment* and the satisfying of *wants*. The psychologist of today, like the older instinct psychologist, is trying to discover common mainsprings of action. Unlike the older instinct psychologist, who placed the emphasis upon inherited *patterns of behavior*, the psychologist of today is basically concerned with *motives to behavior*.

Modern discussions of human wants and needs, like the older instinct psychology, are of necessity somewhat theoretical, but present-day theory is supported by direct experiments with animals and many studies of human motivation. Experiments with animals have contributed the concept of *activity in response to bodily tension*, a basic idea in a useful theory of human motivation.

ORGANIC TENSIONS AS DRIVES

As noted in the last chapter, the human organism is so constructed that we universally make responses, not only to stimuli in the external world but to various changes within the organism itself. Certain internal changes seem to exert a great influence over the body as a whole, as they serve to bring about an increase in general bodily activity. Basic tendencies to become active under certain conditions are known as *physiological drives*.

Studies of Physiological Drives.—Various ingenious devices have been used in studying the activity of animals under certain conditions. In one laboratory plan of research, the animal, very often a white rat, is placed in a compartment within sight and smell of food or some other incentive. It is given an opportunity to learn how to get to the incentive, and after it has learned the path leading to the goal, an important part of the pathway is then electrically charged. The animal cannot reach its goal, or objective, without traveling over the charged passageway and experiencing a mild degree of electric shock. The measure of its *drive* to reach its goal is the number of times that the animal will cross the charged plate, within a given period of time. The behavior of the animal depends, of course, upon

its organic condition. An animal that has just been fed, for example, will not submit to the punishment of the electric shock passageway in order to get to food. The experiments are, of course, timed in accordance with the animal's organic condition.

The incentives used to measure the hunger and thirst drive are, as might be expected, food and water. To test the maternal drive, the female white rat is separated from her litter. The incentive to the sexual drive is the mate. In every instance, the incentive which is appropriate brings about increased activity upon the part of the animal. Measured in terms of the amount of punishment an animal will take in order to reach the various goals, the maternal drive of the female white rat appears to be the strongest drive, with thirst, hunger and the sexual drive operating in the order named.¹

Strength Of Drive Related To Amount Of Activity.—The day by day behavior of the female white rat illustrates, in a striking manner, the relation between certain organic conditions and the amount of general bodily activity to be observed. About every fourth day the female rat, because of organic conditions, is responsive to the advances of the male. At any other period in the four or five day cycle she is unresponsive or antagonistic to the male. It has been estimated that the female rat, at the peak of the cycle, may run as much as ten miles a day, while on other days she runs only a fraction of a mile.² This hyperactivity at certain periods is illustrated in Figure 22.

Activity Due To Tension.—In all studies of physiological drive on the animal level, the animal's activity is shown to be related to bodily changes that are real. A parallel between animal and human activity seems to be clearly indicated. When we are hungry we are aware of an internal disturbance which we have learned to recognize as *hunger pangs*, and we cannot be comfortably relaxed until food has caused the pangs to disappear. Similarly, when the organism is in need of liquids, we experience an uncomfortable condition which we call *thirst*, and we cannot relax until our thirst has been quenched. It is convenient to describe organic states such as those of hunger and thirst as *states of tension*. Even though we do not know the exact nature of such tensions, we shall find it useful to accept as a working hypothesis that *activity is a normal response to organic tension* and that *relaxation is impossible as long as tensions persist*.

In everyday life we find many illustrations in human behavior of a relationship between specific organic conditions and a tendency to be restless. A person who goes to bed hungry, for example, is more likely to be restless in his sleep than one who is well-fed. Restlessness is also characteristic of the behavior of a person who is thirsty, fatigued, or in some other way disturbed

by organic changes. We are also vaguely aware, at times, of organic changes, without being able to identify the disturbance, as we can when we are hungry or thirsty. We are restless without knowing why we are unable to relax. We may feel tense and ill at ease without knowing what is responsible for our uneasiness. Restlessness is sometimes an evidence of a generalized

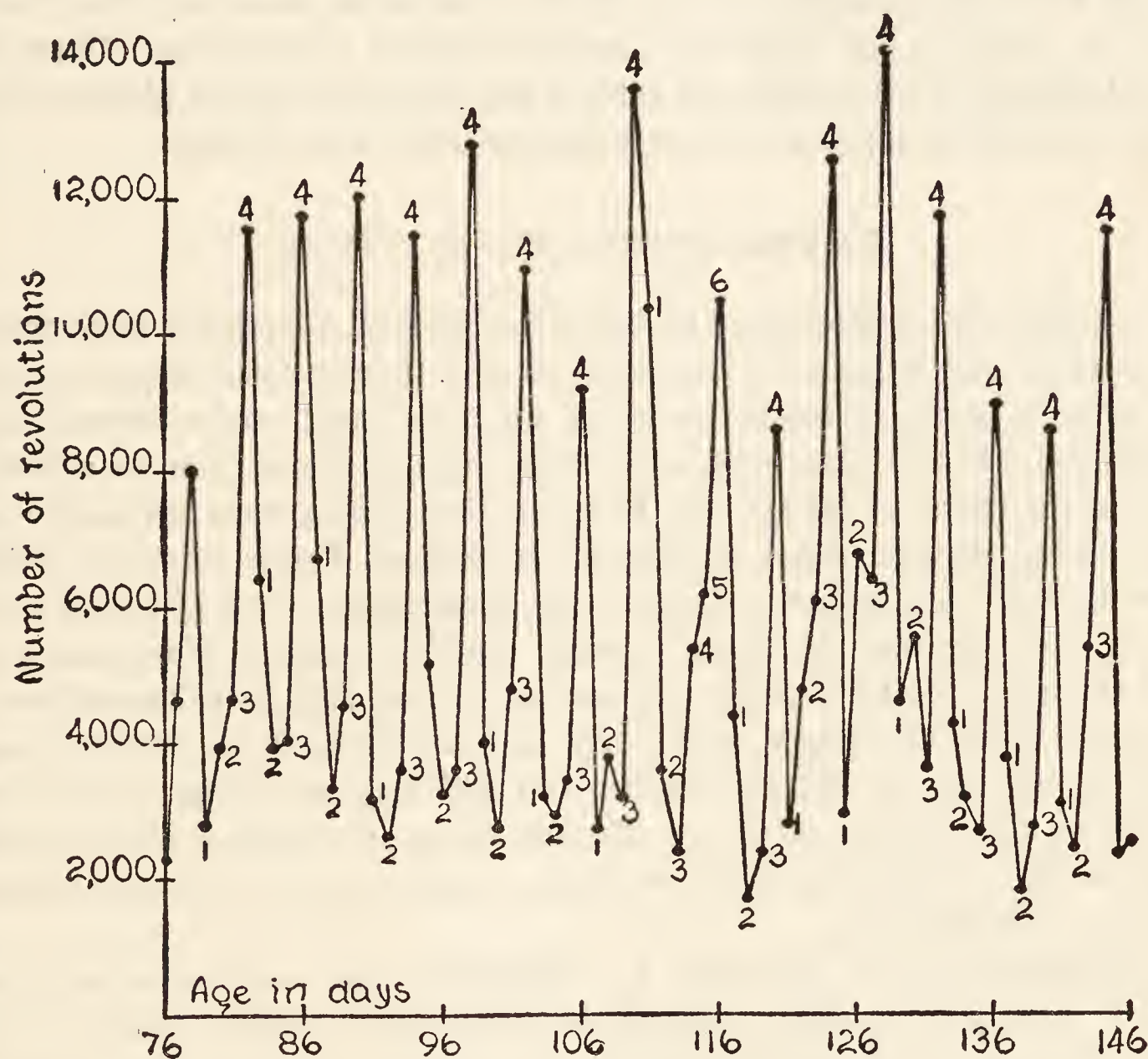


FIG. 22.—GRAPHIC REPRESENTATION OF THE LOCOMOTOR ACTIVITY OF A FEMALE ALBINO RAT OVER A SERIES OF DAYS.

Note the prevalence of a four-day cycle of activity. On the days of maximum activity these animals are sexually receptive. (After Richter, 2, 321, from Hull, *Principles of Behavior*, D. Appleton-Century Company, New York.)

state of organic tension which is difficult to identify. The student nurse recognizes the fact that a restless patient is suffering from inner tensions and she is taught to make a careful record of his disturbed reactions.

In attempting to interpret certain basic human responses as reactions to organic tensions, we are primarily concerned with *generalized* tension such as we experience when we are restless or uneasy without knowing why. While

we do not know what changes in blood chemistry, for example, accompany such generalized tensions, we can assume that they are similar to changes which accompany more specific tensions, such as those associated with hunger, thirst or other basic physiological drives.

The young baby furnishes many illustrations of what is meant by tension. When he is cold, hungry, or in pain, he is active in more ways than one; he cries, becomes red in the face and his muscles become tense. When he is not disturbed, his muscles are relaxed and he appears to be placid. When he is peaceful he appears to be experiencing little or no tension.

DEVELOPMENT OF MOTIVES

A basic drive is determined by hereditary factors. A tendency to be active when tense also appears to be inherited. Any *differentiated* responses that we make to states of tension seem, on the other hand, to be learned. The uneasiness which a man experiences when hungry impels him to activity, and, in the course of his activity, he learns that certain ways are good ways of reducing tensions which are due to the hunger. Under primitive conditions he may hunt or barter. Under some circumstances he might steal food. There are many ways in which he might gratify his needs. We cannot predict the nature of his activity, but we can be sure that he will continue to be active until his hunger needs have been satisfied. If he cannot obtain food in one way he will try another and will keep on trying. As soon as he learns that certain ways are effective ways of obtaining food we say that he has a *motive* to hunt, to steal, to barter or to whatever method he may have selected.

Development of Motives In Babyhood.—In earliest infancy the bodily activity of a baby seems to be linked with organic tension. Very soon, however, as the baby develops, we note that activity seems also to be associated with well-being. Except in early infancy, a baby who is very quiet, when awake, is an ill baby. It seems, in the light of numerous studies, that healthy babies have a drive to general activity other than the activity which characterizes a response to organic tension. The activity of a baby, at one stage of development, seems also to be unrelated to factors in the external environment. Given the right kind of physical care he kicks, and turns, and twists, and waves his arms and is generally active.

We shall not attempt to explain what is involved in a general "sense of well-being" other than to suggest that under such conditions there is an *absence of marked organic tension*. A healthy baby, also, responds actively to environmental stimuli, and with increased reaction to various aspects of

his environment, *motives* emerge. If a newspaper is put into the hands of the baby as he slashes the air with his arms in an apparently random sort of way, he may accidentally crumple the paper between his hands, producing a most pleasing effect; if he does he is likely to continue to crumple the paper. He has, through such an experience, acquired a *motive* to handle the paper in such a way as to make it crumple between his hands with a pleasing, crackling sound. In much the same way a baby discovers that the lids of pans, for instance, brought into contact with the floor or with other lids make a noise that is wholly satisfying. Thus the baby learns a motive to pound.

Joy In Being A Cause.—The satisfaction which a baby takes in pounding, rattling and banging is self-evident. That it is the act of making the noise which brings him satisfaction, rather than the noise itself is also self-evident. Anyone who wishes to test this belief has only to take the noise-making object away from the baby and to do the hammering and banging for him. He will soon note that the baby's satisfaction very quickly turns into dissatisfaction, as he gives unquestionable evidence of his disapproval. When his spontaneous activities are restricted, the activity which is the baby's characteristic response to tension will be demonstrated.

It is suggested that the student try several experiments with a baby who is old enough to sit alone on the floor and to manipulate and reach for objects without losing his balance. One simple experiment is to build a tower of blocks within the baby's reach, and at one stage in the building, to knock it down. After the first demonstration of what happens when the tower comes down, the baby should be given an opportunity to knock it down. Try building a third tower and watch the baby's response, to see whether he will sit quietly by while you knock the tower down. Another experiment of much the same nature can be tried with dominoes by placing dominoes, one behind the other, so that a touch of the finger on the last domino will cause the whole row to fall. If experiments such as these are tried, the student will discover that the baby not only enjoys certain noises *but likes to make things happen*. This is well illustrated in Figure 23.

For Figure 23, see pages 140-141.

Motives Of Personal Worth.—The joy of the baby in *being a cause* and his evident tension when his activities are restricted are human characteristics which are not lost in the process of growing up. We have but to look around us to find similar characteristics evident in adult life. The scientist in his laboratory, the inventor, the artist, the composer, to mention only a few, all demonstrate motives that are not unlike the motives of the baby who finds it so satisfying to "make things happen". In the realm of the

commonplace, we may find countless illustrations of a similar motive entering into everyday experiments, inventions and creative activity. The housewife, for example, in modifying a recipe or altering a dress pattern, manifests satisfaction in her invention. The student nurse, in trying out various ways of successfully soothing an overwrought child, seems to find her experiment challenging and gratifying.

In the illustrations cited, from the baby with a newspaper to the scientist who, perhaps, is seeking to isolate an element that will contribute to the welfare of humanity, we note a *self-interested* motive that is in no sense selfish. The baby is altogether non-selfish in his manipulation of materials. As he rattles and bangs and crumples, he is not interfering in any way with the happiness or welfare of others. As a matter of fact, he usually proceeds with his experiments as if he were alone in the world.

The nurse is certainly not prompted by a selfish motive as she tries out ways of helping a disturbed child. Her motives are distinctly unselfish. She is primarily motivated by the need of the child but, at the same time, she is mildly moved by a self-interested motive that is not altogether unlike that of the baby. Her motives are, of course, mixed. As soon as life becomes social, motives tend to become mixed and complex. It is probably only in babyhood and in situations such as have been mentioned that we find reaction to the external environment prompted by very simple motives.

Motives of personal worth are normal, healthy, and essential to individual and social welfare. While such motives are not inherited, or *instinctive*, it is possible that they have their origin in whatever enters into a basic sense of well-being in babyhood, in an inherited tendency for bodily tensions to occur under certain conditions and in an inherited tendency to be active in response to tension.

Social Motives.—Motives tend to become increasingly mixed, as life becomes more social. The joyous baby who plays as if he were alone in the world would not survive were it not for the care given him by adults. Although his life is much less social than that of an older child, the baby lives in a world in which contact with other persons is essential. In his earliest social experiences he begins to form social habits of various kinds. He learns certain habits of conformity, as he becomes habituated to a daily routine. He learns to enjoy the company of adults, because in the presence of an adult he is kept comfortable, warm and well-fed. In the habits that he is acquiring during the months of babyhood, he is acquiring social motives which may have a profound effect upon his later life.

Older children, through the give-and-take of life with other children, also acquire habits which serve as motives to various types of social be-

havior. One child may learn to yield, perhaps too often for his own best adjustment, but having formed the habit of yielding he may continue to yield because he knows no better way of adjusting. Another child may lead, habitually, thus acquiring motives to take the lead in play and in work. Another may habitually imitate ways of behaving. Competition is encouraged in many families. Children are often urged to compete in activities which are not essentially competitive such as drinking milk, dressing quickly and similar routine performances. In some families, the advent of a baby makes the next older child feel insecure and unsure of himself, and competition for affection or *jealousy* is the result. Schools continue to encourage competition by awarding stars or other tokens to those whose work is best.

Studies of the strength of various incentives suggest that competition tends to stimulate effort. Sometimes groups are pitted against groups. Younger children appear, in some instances, to be more stimulated by group competition than older children are.³ When the strength of group rivalry as an incentive is compared with individual competition in the case of older school children and adults, person-against-person competition appears to be the stronger incentive according to studies made some years ago.^{4, 5} Despite the fact that motives of personal worth are not necessarily competitive, the baby's *joy in being a cause* very soon seems to become a highly complex motive, complicated by social experiences.

Interaction of Personal Worth and Social Motives.—Personal worth motives and social motives such as motives to conform, to lead, to imitate, to cooperate and to compete seldom operate independently. No person could, if he would, be totally self-interested. Everyone is dependent upon other persons for his very survival. All persons, from earliest babyhood, are subjected to social experiences through which they acquire social habits which serve as powerful motives to behavior.

The two types of motives (personal and social), sometimes operate in such a way as to reinforce one another. The student nurse, for example, who is to be successful in her career, cares a great deal about what her fellow-students think of her. She places a high value upon her standing in the community. She appreciates the personal satisfactions which accompany service to those who need her ministrations. She values the *prestige* of the nurse. She wants to be worthy of the respect which the nurse commands. She is now and will continue to be motivated to act in such a way as to prove to herself that she is a *worthy person*, while serving others.

Without social activities of many kinds she would be unable to prove her personal worth, even to herself. Fortunately, she is strongly motivated to play, to the best of her ability, her own small part in the conduct of the

hospital as a whole. She is motivated to do many things which she does not enjoy in and of themselves because she looks forward to the contribution which she, as one person, may make to public welfare. She anticipates her share in the care of the ill and emotionally disturbed. In her professional program, her personal worth and social motives tend to integrate and interact; it is possible for her to feel worthy while conforming to the routine essential in her training and while participating in the activities of her professional associates. Because nursing is, on the whole, a non-competitive profession there is no reason why each nurse cannot take satisfaction in the success of her associates; service to humanity is not undertaken in a spirit of competition.

Not all professions offer so good an opportunity for the integrating of personal and social motives. In strongly competitive fields, the success of one is based upon the non-success of others, and motives of personal worth sometimes give way to "cut-throat" motives, as motives to personal aggrandizement dominate other and more social motives. It is fortunate for the student nurse that her field encourages the integration of personal worth and social motives, because, as we shall see in a later chapter, the integration of motives is essential to well-rounded, or well-balanced, personality development.

Personal Worth and Social Motives In Conflict.—The integrating of personal and professional motives does not take place all at once, or as soon as the student enters the hospital school. During the early weeks of training, student nurses often experience conflict of motives, when called upon to observe seniority regulations and to adjust to restrictions, such as those limiting their choice of recreational hours and activities. Outside her profession, the student nurse is as likely as anyone else to experience marked conflict of motives. Consider, for example, the student nurse, who all her life has been acquiring motives to make her parents happy, and who, at the same time is strongly motivated to "go with the crowd". She discovers that she cannot do as her friends do and contribute to the happiness of her parents. If she makes her parents unhappy she cannot feel worthy. Conflict of motives is inevitable, and resolution of conflict absolutely necessary to good adjustment. In leaving home and joining a new group, the student nurse occasionally learns that the standards which she and other members of her home community have cherished are held in little esteem by some of her new associates, and a conflict between personal worth and social motives results. She cannot feel worthy if she is disloyal to her traditions but, on the other hand she wants to be like her fellow students and wants them to like her. Sometimes conflicts such as these are resolved, but in some in-

stances they result in strain and tension and a feeling of frustration, because some motives are blocked. Reactions to strain and frustration will be discussed in a later chapter.

A person whose motives are blocked does not necessarily experience great frustration. One, for example, who is ready and willing to cooperate in a group enterprise, but denied the opportunity, does not of necessity become greatly disturbed. Some persons who very much prefer to have a companion, under certain conditions, manage to be content when alone. Many student nurses who have motives to be independent in their choices, are able to conform to choices already made for them without undue disturbance. Obviously, the thwarting of a motive does not always result in great frustration.

Under many conditions, however, the blocking of a strong motive does appear to be the cause of tension and unrest. Why is it that the thwarting of a social motive is sometimes disrupting and sometimes not? The answer to the question must be theoretical because it is impossible to gather experimental evidence upon which to base an answer. The experience of teachers, counselors, social workers and all others whose business it is to help other persons in their social and emotional adjustment suggests that a person's attitude toward himself is of the utmost significance in determining how well he can endure a large amount of blocking of his other motives without becoming greatly upset. A person who is not at all sure of his own worth is much more easily disturbed when certain of his impulses are blocked. The assumption that motives of personal worth are the *key motives* to adjustment has proved highly satisfactory in counseling practice. The student nurse may safely assume that such motives are of paramount importance in the adjustment of all persons with whom she may come in contact.

COMMON HUMAN NEEDS

So far, we have considered basic physiological *drives* to which increased activity is the normal response, and *motives* which tend to give direction to the activity. There is a third term, used in modern discussions of motivation, without which it is difficult to have any real insight into human behavior; the term is *need*. We have numerous laboratory experiments to which to turn for a demonstration of what is meant by drive. Studies of differentiated reactions to various experimental situations give us a fair idea of what is meant by a motive. A need is less tangible and not easily subjected to laboratory tests. For an interpretation of how human needs seem to influence behavior we must resort to theory.

The Nature of A Need.—We have noted laboratory studies of white rats, responding with increased bodily activity to various physiological drives. The mother rat, for instance, when separated from her young, has a strong drive to activity which continues until she reaches her litter. We assume that the white rat under these conditions is in a state of actual bodily tension, and that she needs to be released from these tensions. Her immediate need is for activity. When she reaches her litter she ceases to be tense and is no longer driven to great activity, so we assume that her need is satisfied.

The baby who is hungry or cold shows a similar tendency to increased activity and he also shows a tendency to be tense until he has been fed or made warm. When attention has been given to his needs, he no longer appears to be tense and he no longer engages in excess activity. When we say that the hungry baby *needs* food or that the cold baby *needs* to be made warm, we are using a term about which there should be no confusion. We are falling back upon a *theory of motivation*, however, when we say that his need is due to a state of tension and that he needs to be released from tension.

We observed, also, that the baby has a drive to general activity which in some instances, seems to be due to a "sense of well-being". It is obvious that he needs to be spontaneously active. We have evidence that a need for activity is real when we note the changed behavior of a baby whose movements are suddenly restricted. We can see his muscles become tense as he struggles as if trying to free himself from the restraint.

We noted that a tendency to behave in such a way as to prove personal worthiness appears to be practically universal. When personal worth motives are blocked, the human organism, presumably, reacts as it does when basic physiological drives are blocked,—by tension and attempts at tension release. In the sense that a hungry animal needs food and a cold baby needs to be made warm, a normal person *needs* to prove to himself that he is a worthy person. If his need is not met (his personal worth motives are blocked), he will, according to the theory we are outlining, become tense. As soon as he becomes tense he needs to be active. If his activities do not serve to release his tensions, he will continue to try out various ways of catering to his personal worth motives. Needs, according to our theory, are a by-product of actual organic tension, directly related to a need for tension release.

Classification of Needs.—There have been numerous classifications of basic needs which are believed to be common to normal persons of all ages. Physiological needs are, of course, included in all such lists, but the

needs of the individual as a social and self-respecting person are listed in various ways. Although not always stated in the same way, certain common human needs are nearly always mentioned: a need to feel safe and secure, a need to be loved and approved, a need to belong and a need to prove personal integrity.

Physiological Needs.—The way in which physiological drives function in life has already been discussed and does not need further discussion at this point. Because whole psychologies are devoted to a consideration of the sexual drive, however, it might be well for the student nurse to pause briefly to consider points of view in regard to this one basic drive. According to one viewpoint, the sex drive tends to dominate all others in human behavior. According to a somewhat different viewpoint, the sexual drive of man is like that of lower animals, only in that it is based upon hereditary organic reactions which involve tension and that it provides a strong drive to activity. Sexual *motives* are believed to be primarily subject to wise or unwise guidance. In childhood, behavior which is believed by some to be an evidence of a sexual drive may be essentially social in nature and due to mixed motives of various kinds. Social experiences often tend to teach a child that many matters pertaining to sex are among the mysteries of life. Wholesome and unwholesome attitudes, and motives to wholesome and unwholesome behavior can be traced directly to learning experiences. At this point, it is desirable that the student nurse should know that there are different points of view in regard to the way in which the sexual drive functions in life.

Need To Be Safe And Secure.—If we consider the difference between being safe and feeling safe we can appreciate what is meant by a security *need*. The nature of a need for safety and security has been demonstrated in bombed areas of England. During the early days of World War II the immediate concern of authorities was for the physical safety of children, and steps were taken to move them away from danger areas as rapidly as possible. In a short time many children were removed from their homes and sent to the country, where they were safeguarded from bombs and actual physical hazards of war. As time went on, it was discovered that some children who had been protected from physical dangers were suffering acutely because of other hazards from which they were not safeguarded. They appeared to be tense and ill at ease and uncertain of how to act with strange associates in strange surroundings. They apparently did not feel safe when away from their parents and families, even though they were protected from bombs. In some instances, it was decided that the hazards of insecurity were greater than the hazards of bombs, fire, and

explosions. In the interest of child adjustment, many other children were allowed to remain in the danger areas, because it was believed that they were safer, in the long run, when facing danger in the company of trusted parents than they were when protected from bodily injury, at the cost of insecurity, worry, and loneliness. Other children who were sent away from home, in the company of teachers or children whom they knew, appeared to feel more secure.

Many children, under normal conditions, appear to be uneasy when their daily routine is disrupted. Children often seem to resist changes, proving themselves very "conservative" in their loyalty to the *status quo*. In adult life, the basic need to be safe is suggested by planning for economic security, home buying, life insurance and provisions for the future.

The need for *security in human relations* is even more important than the need for economic security. We feel secure or safe when we know what to do, when we know how to meet various situations. New, strange and *unmanageable* situations tend to make us feel insecure, and in some instances, may cause actual terror.

Need For Approval, Love And Affection.—A need for affection characterizes men, women and children in all walks of life. Babies seem to need affection in much the same way that they need food and physical care. In many states the child placement agencies place wards of the state in private families, in preference to institutions, because many child specialists believe that an institutionalized child cannot have as much love and affection as he needs for his normal development.

A person whose need for affection is not satisfied sometimes does all sorts of things to attract attention to himself. He may be blustering or boastful. He may "show-off" even though in so doing he does not attain the affection which he apparently wants. The child in the hospital ward who is sometimes labeled *spoiled*, because he is constantly bidding for attention, is often a child who is in real need of affection. The adult patient who is over-exacting and who asks for many extra services may be suffering from the same lack as the child who bids for frequent attention. Each one may be in great need of assurance that he is a worth while person.

Need To Belong.—If we were to make a study of a person who is an outcast from a social group we should, no doubt, conclude that his maladjustment is partially due to the fact that he is an outsider,—that he does not belong. The need to belong appears to be universal. It is basic in all public enterprises in which a number of persons must participate. It is just as basic in the adjustment of an individual. The need to belong and the desirability of recognizing that need in a hospital situation is illustrated

in the following story, told to the author by the superintendent of a children's hospital.*

A colored child in a hospital ward was totally bald and so morose that for several weeks no one had been able to get her to speak, much less to smile. Shortly before Christmas someone sent gay hair ribbons to the hospital to be distributed among the little girls. The nurses in charge of the morose child were troubled because they realized that she was already marked as unusual because of her baldness, and they feared that the child might suffer acutely if she should be unable to wear a hair ribbon along with the rest. One ingenious nurse solved the immediate problem by sewing a hair ribbon to a piece of adhesive tape ready to be applied to the hairless head on Christmas morning. When the ribbons were distributed the bald child was among the first to receive her gift, and her delight, when the bright bow was plastered to her head "just like the other girls" was so great that she forgot her woes and talked.

The story speaks for itself. If the superintendent had not been aware of a universal need to belong she might not have recognized the fact that a small piece of adhesive tape, plus a large amount of insight into human nature, could change the entire outlook of a child.

Need For A Sense Of Personal Integrity And Self-Actualization.—A person who is secure in his personal relationships, is the recipient of a normal amount of affection, and shares in the activities of his group, is sure to be more self-respecting than one to whom such privileges are denied. For an adjustment on a high level something more is needed, however. Everyone seems to need to make a fair evaluation of himself. This appears to be essential to good adjustment. Like the baby who takes joy in making things happen, the well adjusted adult needs, in addition to social evidences of his worthiness, his own first-hand discoveries of powers which may be hidden within him.

It is a need such as this which prompts the artist, the composer, the inventor and the scientist to experiment and to be creative. It is a need which occupational therapists have in mind when they encourage a distraught person to *find himself* through something which he can do with his hands. Art classes are offered to normal adults in everyday life in order that they may try their wings through creative effort. It is to meet such a need, that many adult education programs are offered. The nurse, in her professional and personal life has many opportunities to recognize and to gratify this need.

* Cunningham, Bess V. *Family Behavior*, Philadelphia: W. B. Saunders, 1940, p. 356. By permission of the publisher.

MOTIVES COMPARED AS TO STRENGTH

While it is impossible to study human motives and needs as directly as one may study the drives of lower animals, there have been some interesting investigations which contribute to an understanding of the importance of motives in our day by day behavior. Studies of the relative strength of human motives are necessarily indirect, but a variety of ingenious methods of evaluating motives has been devised.

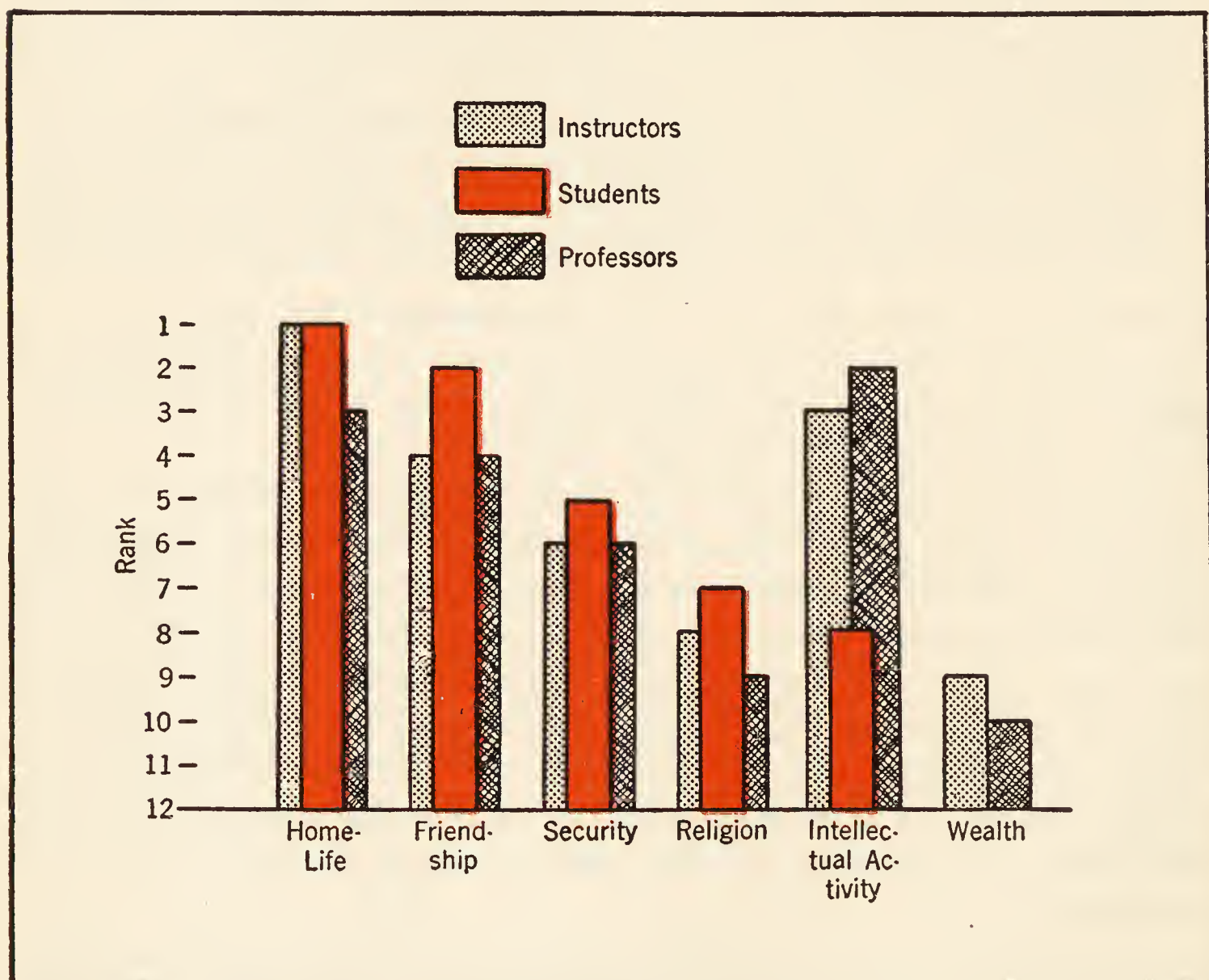


FIG. 24.—MOTIVATION OF STUDENTS, INSTRUCTORS AND PROFESSORS.

(Adapted from A. D. Woodruff, "The Relationship Between Functional and Verbalized Motives". *J. Educ. Psychol.*, 1944, 35, 101-107.)

A Study of Adult Values.—In a recent study of *values*, students preparing to teach, college instructors, and college professors were compared. Two sets of values were obtained from each group: *verbalized* values and real values as indicated by an indirect test.⁶ The values indicated by the test, considered the *real* values, were selected by students in the following

order: (1), *home life*; (2), *friendship*; (3), *social service*; (4), *personal improvement*; (5), *security*; (6), *comfort*; (7), *religion*; (8), *intellectual activity*; (9), *society*; (10), *excitement*; (11), *political power* and (12), *wealth*.

Differences in values held by the three groups, representing three ages, are suggested in Table I and in Figure 24. All three groups placed a high value upon *home life*, *friendship* and *social service*. It is interesting to compare the values rated in the upper half by each group. The professors valued *social service* and *intellectual activity* more than *home life*, while both instructors and students rated *home life* first. For more comparisons examine Table I. A study of Figure 24 suggests other interesting comparisons. One difference, as might be expected, is in the relative weights given to *intellectual activity*.

TABLE I.—FIRST 6 OF 12 “VALUES” AS INDICATED BY STUDENTS, INSTRUCTORS AND FULL PROFESSORS

Rank	Students	Instructors	Full Professors
1	Home Life	Home Life	Social Service
2	Friendship	Social Service	Intellectual Activity
3	Social Service	Intellectual Activity	Home Life
4	Personal Improvement	Friendship	Friendship
5	Security	Personal Improvement	Comfort
6	Comfort	Security	Security

Adapted from Woodruff, A. D. “The Relationship Between Functional and Verbalized Motives,” *J. Educ. Psychol.*, 1944, 35, 101-107.

Desires As Suggested By Expenditures.—The way a person spends his money is, to some extent, an indication of what he cares about and hence is an indirect evidence of motives by which he is prompted. Various attempts have been made to analyze the buying habits of large groups. Using data on the amount spent in the United States, for various items, in a given period, the expenditures were analyzed in terms of common desires.⁷ The comparative strength of desires, or needs, is suggested in Table II. It is interesting to note the relatively high ranking given to physical needs, the need to be safe and secure and the need for approval, love and affection. Examining the purchases in the light of the classifications of needs discussed in this chapter, more than one-third of total expenditures might be classified under *physical* needs, more than one-fourth under *safety and security* and more than one-fifth under *approval, love, affection* and

belonging. About one-tenth might be listed under *personal integrity* and *self-actualization*. (These estimates are rough and should be considered only as suggestive.)

TABLE II.—DESIRES AS SUGGESTED BY EXPENDITURES

Desire	Per Cent of Total Expenditures
Hunger	11.2
Security	10.5
Protection against elements	10.2
Approval of others	7.2
Welfare of others	7.2
Taste and smell	4.6
Other comforts	4.5
Protection against animals and disease	4.4
Social entertainment	4.2
Approval of self	4.0
Sight and sound	3.9
Sex entertainment	3.9
Minimizing pain	3.5
Mastery over others	3.0
Rest and sleep	2.6
Protection against bad people	2.5
Companionship	2.3
Mental activity	1.9
Reproduction	1.9
Curiosity and exploration	1.8
Affection	1.8
Physical entertainment	1.1
Sex relief	0.8
Exercise	0.4

Adapted from Thorndike, E. L. "What Do We Spend Our Money For?" *Sci. Mo.*, 1937, 45, 226-232.

In another study, made with adult subjects, a series of 25 aversions and a second series of 25 satisfactions were rated.⁸ In this case, the choices were limited to the 25 propositions offered. A rating of 10 was the maximum possible for either satisfactions or aversions. There was one satisfaction which received a rating of 8.8,—*to have a loving (and loved) companion for life*. Two aversions received correspondingly high ratings,—*to become blind*, 8.8, and *to have your intelligence reduced below average*, 8.5. In Table III, the ten satisfactions and aversions receiving the highest ratings are listed. No satisfaction or aversion included in the table received a rating of less than 5.2.

TABLE III.—SATISFACTIONS AND AVERSIONS RECEIVING THE TEN HIGHEST RATINGS IN EACH GROUP

Satisfactions	Aversions
To have a loving (and loved) companion for life, who shares your responsibilities	To become totally blind
To possess every book you would like	To have your intelligence reduced to below average
To have your work praised and acknowledged	Never again to read another book or periodical
To write a successful book, play, or monograph	To hear no more music for the rest of your life
To be a forceful talker, both in private and in public	To be shunned by your friends and acquaintances without being able to find out the reason
To be able not to worry, even when there is good cause	To have to go to bed at 6 every night, and get up at 2 in the morning, for the rest of your life.
To have complete security in your job (or your husband's)	To become totally bald
To meet people and go places	To live in close contact with uncongenial people for a year
To be admired by your crowd	To work under someone who constantly criticizes you
To have a brilliant child	To cut a pig's throat with a knife

Adapted from Eysenck, H. J. "A Study of Human Aversions and Satisfactions and Their Relation to Age, Sex and Temperament," *J. Genet. Psychol.*, 1943, 62, 289-299.

In the three studies of adult motivation, we find suggestions of some human motives that are commonly shared. One of the best uses that a student can make of materials such as are reported in studies of this nature, is to use them in checking her own motives and those of other persons. It is extremely difficult to recognize either our own motives or those of others. By using a guide, we can sometimes become aware of driving forces which we have not appreciated. Another equally good use to make of studies of human motives is to discuss them with a view to stimulating an ever-increasing curiosity about the mainsprings of human activity.

SUMMARY

For years an attempt has been made to find universal patterns of human behavior. According to the instinct theory, man inherits complex tendencies such as a tendency to collect, to be gregarious and self-assertive and to do innumerable other things. The instinct theory is not satisfactory to many present day psychologists who are impressed by the lack of pattern in any but the simplest forms of behavior.

Interest has shifted away from patterns of behavior to common driving forces. At present, attention is focused upon why man behaves as he does,—upon common motives and common needs.

Human motives are not readily subjected to laboratory tests. For this reason, *theories* of human motivation must be based upon laboratory studies of animals, somewhat general studies of human preferences, and studies of the comparative strength of certain selected motives.

Basic physiological drives seem to involve actual bodily tension, according to studies of animals. When an animal is restrained from reaching a goal he tends to become very active and to persist in his activity until his goal is reached.

A workable theory of human motivation assumes that man, like lower animals, is impelled to activity by whatever makes him tense. When tense, he cannot relax and must continue to be active.

When, in his activity he hits upon a response which releases his tensions, then he begins to learn a *motive* to behave in a certain way.

The baby, in his earliest days, gives evidence of tension and relaxation. He appears to have a drive to general bodily activity, without regard to anything in his external environment. As soon as he can manage his body well enough to manipulate objects, he seems to have a preference for *making things happen*. When he is restricted in his free activity he becomes tense.

In adult life, similar tendencies to be motivated to make things happen and to be tense when restricted are to be observed. Everyone seems to be motivated to behave in such a way as to prove his personal worth.

Motives of personal worth are basically wholesome and essential to social welfare as well as to individual adjustment.

Social motives are learned through contact with associates. We learn to cooperate in a common undertaking and to acquire motives to cooperate in other undertakings. We acquire motives to lead and motives to follow. We are stimulated to develop competitive motives. A personal reaction to emphasis upon competition has been expressed.

Personal worth and social motives can interact in such a way that we

can feel worthy while engaging in approved social activities. The nurse has an unusual opportunity to integrate her motives.

Personal worth and social motives sometimes conflict, leading to tension and maladjustment.

There appear to be certain *needs* which are common to all persons. It is not easy to define a need. An animal, motivated to reach a goal, is tense and in need of relaxation, therefore he needs to reach his goal. A baby who is hungry or cold has a drive to activity,—he needs to be fed and made warm. A person whose motives are blocked *needs* whatever it may be that will provide a release, so that he will no longer be blocked.

Basic human needs have been variously classified. Stated in somewhat different terms, there is general agreement that everyone has certain physical needs: a need to be safe and secure, a need for approval, love and affection, a need to belong and a need to prove his personal integrity.

Studies of adult motives tend to bear out the assumption that there are certain common mainsprings of action.

SUGGESTED ACTIVITIES

1. **Discussion.** In a study of children between the ages of six and ten, various types of guidance were evaluated.⁹ The children, during the first part of the investigation, were told whether they were right or wrong in punching a maze. Later, the bell was rung when a child made a correct response, or a bell was rung when a child made a wrong response. Positive guidance, or emphasis upon right rather than wrong, proved to be more helpful than negative guidance for the group as a whole and for children in each age group.

(1) What common human needs are satisfied with positive guidance?

(2) Discuss nurse-patient relationships (not necessarily limited to children), in the light of the study. Give illustrations of positive and negative guidance obtained from your own experience or observation if possible.

(3) What would be involved in guidance that is neutral, neither positive nor negative? Which type do you prefer for yourself as a student? Do nurses tend to fall back upon *neutral* guidance?

2. **Discussion.** The nurse often has an opportunity to help to safeguard children from jealousy.

(1) When a new baby comes into the family, the next older child is often unhappy. Some careless observers may label him *spoiled* if he demands an unusual amount of attention, after the arrival of the baby. What motives of the next older child may be thwarted when the new

arrival puts in an appearance, and what might the nurse do to safeguard the child from becoming jealous?

(2) What situations in the hospital, in your opinion, may stimulate jealousy? What, if anything, can the student nurse do about it?

3. **Suggested observation.** Without attempting to say whether common reactions are learned or mainly hereditary, observe newborns closely to note ways of behaving which appear to be universal. Compare notes.

4. **Suggested experiment.** Try the experiments with blocks and dominoes, suggested in the chapter, using as your subject a baby about twelve months old. Record his reactions. Try a similar experiment with older children or adults by attempting to show them exactly how to solve a puzzle or manipulate a mechanical toy. Record their responses. You might try telling a person who is reading a mystery just how the mystery story ends. Report the results of your experiments to the group.

5. **Suggested investigation.** One method frequently used to discover children's motives is that of the "Three Wishes". It is often feasible to make a study of this kind among hospitalized children. Ask the child to tell you what he would wish for if he could have anything in the world that he wanted. Then, ask him to tell you the three things that he would wish for. Many children will be materialistic and will wish for possessions such as a bicycle or a pony. Occasionally, you may be able to discover some deeper underlying motives. Record your findings and compare notes. Discuss any non-materialistic wishes which may be indicated or wishes for material things which seem to suggest a deeper motive. The results of your study, while of no scientific value, may add to your appreciation of motives.

6. **Discussion.** The classification of human needs used in this chapter has been suggested by one proposed by Maslow, who has developed an interesting theory.¹⁰ He suggests that physiological needs, and needs for safety, love, esteem, and for self-actualization operate in an *ascending order*. When physiological needs are not met, they dominate motives; if they are met, safety needs, a higher order of needs, tend to dominate. If both physiological and safety needs are met, a next higher order, love needs, tend to dominate. Esteem needs are significant only after lower order needs have been met. Needs for self-actualization are recognized after all lower order needs have been met. It is only a theory, but it seems to be especially interesting when we consider the adjustments of those who are ill.

What illustrations can you find, in the behavior of patients in the hospital, to suggest that *levels of motivation* may be related to the status of each patient?

7. **Notebook suggestion.** Study Thorndike's analysis of money spent, with the classification of basic needs used with this chapter in mind. Try to organize expenditures under the five groups of needs, i.e., physiological, safety, etc.

Judged by expenditures only, what needs seem to predominate?

SUGGESTED READING

Berrien, F. K. *Practical Psychology*, New York: The Macmillan Co., 1944.

For a discussion of morale and rewards in industry, read Chapter X, (especially section on "Nonfinancial Rewards").

Durant, Will. *Transition*, New York: Simon and Shuster, 1927.

This is leisure reading. It is especially significant in connection with our discussion of conflicting motives.

Langer, Walter C. *Psychology in Human Living*, New York. D. Appleton-Century Company, 1943.

"Social Needs" are discussed in Chapter IV and "Egoistic Needs" in Chapter V.

Nagge, Joseph W. *Psychology of the Child*, New York: The Ronald Press, 1942.

Many studies of motivation and incentive made with children are summarized in Chapter X.

Valentine, Willard L. *Experimental Foundations of General Psychology*, New York: Farrar and Rinehart, Inc., 1941.

Studies of motivation and incentive, including some studies made with adults are summarized in Chapter X.

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- ⁵ MALLER, J. B. "Cooperation and Competition: an Experimental Study in Motivation," *Teachers College Contributions to Education*, 1929, No. 384.
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- ⁷ THORNDIKE, E. L. "What Do We Spend Our Money For?" *Sci. Mo.*, 1937, 45, 226-232.
- ⁸ EYSENCK, H. J. "A Study of Human Aversions and Satisfactions and Their Relation to Age, Sex and Temperament," *J. Genet. Psychol.*, 1943, 62, 289-299.
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Chapter VII

LEARNING HOW TO STUDY

The student nurse, during the early months of her training, finds herself a learner in all sorts of situations. She is learning how to get along with others in the hospital and school. If she is to be successful in her profession, she is also learning to feel right about what she does. She finds that she needs to acquire habits of critical thinking. She must perfect new skills as rapidly as possible. Her day by day learnings of basic facts and principles are numerous and often somewhat complicated. Psychology would fail in one of its major purposes if it did not help the student to *learn how to learn*.

In this and succeeding chapters in which various aspects of learning are discussed, the student nurse should find suggestions as to how she may best help herself. We have just been considering common drives to activity and various motives which tend to keep us going in certain directions in preference to others. Much of the student's learning is essentially self-motivated. This is especially true of study habits and skills.

A baffling problem which is mentioned very often by student nurses is that of time pressure. In the hospital school, students are sometimes overwhelmed by the amount of studying to be done and the little time in which to do it. They are bothered, too, by the necessity for making several class preparations within a few hours. Investigations suggest that most students need help in scheduling the time that they have at their own disposal and in organizing their preparations. In spite of provisions for quiet periods in hospital schools, the student nurse must often study in the midst of inevitable bustle and stir. It is hard for some to study in dormitory rooms with activity and some noise in the hall. Even in the library, some students find themselves distracted by the going and coming of others. It is difficult to know how and when to read selectively.

These and other problems related to study can be partially solved by students who can discover a few guiding principles, can interpret them in the light of everyday experiences and can apply some such principles to daily study procedures. There are three principles which should prove immediately suggestive to a student who is interested in improving her habits of study: (1) *intelligent learning is self-active and necessitates changed behavior*; (2)

intelligent learning is goal-directed and one who defines a purpose clearly learns better than one who does not; (3) intelligent learning implies an interest in meanings and a recognition of the relatedness of aspects of the total learning situation.

LEARNING IS SELF-ACTIVE

“You can lead a horse to water,” so the old saying goes, “but you can’t make him drink.” Nothing is truer of learning. A student can be surrounded by books, advice about studying may pour into his ears, his eyes may see that his associates are occupied with their studies, but there is only one person who, in the long run, can make him study. That person, of course, is himself. We have some experimental studies of the importance of self-motivation in learning. In one of them, ten college freshmen who were pledged to a fraternity were the subjects.¹ After nearly a week of strenuous treatment at the hands of fraternity members, they were told that their admission to the fraternity would depend upon their success in working problems in arithmetic. They were obliged to work as rapidly as possible in spite of their great fatigue. In order to evaluate their work under these conditions, the weary but very zealous freshmen were compared with some students of equal intelligence who were two years ahead of them in their college program. The juniors took the test under ordinary classroom conditions. A comparison of the output of the two groups showed that the tired freshmen did twice as many problems as the juniors, and with equal accuracy. It seems that their determination to pass the test spurred them to much greater effort than would be likely under ordinary conditions.

Since student nurses are usually pressed for time, some strongly motivated, self-initiated activity along this line would not be amiss in most situations. For this reason, the problem of time-budgeting, is probably one of the first to which to apply the principle, *learning is self-active*.

Establish a Set Time for Studying.—In suggestions regarding study, in any situation, a time and a place for studying are nearly always emphasized. In the case of the student nurse, time is an especially important consideration. In the hospital school the pressure of work is usually great. The student who has been accustomed in high school to large periods of time which could be set aside for study purposes, often finds that she cannot so readily devote extended blocks of training school time to her class preparations. If she were to make an analysis of her weekly schedule, however, she would probably find that there is more time available for study than she had believed possible.

In several psychology classes of student nurses who were enrolled at a university for their first half-year's training, students were encouraged to make estimates of their weekly time allotments. One student in the above group, in attempting to estimate her use of a week's time, concluded that she spent about fifteen hours a week in "fussing around". Another, from a different school, decided that she was spending sixteen hours a week in "just fooling". A third, from a third school, estimated that she was devoting between three and four hours weekly to "arguing".

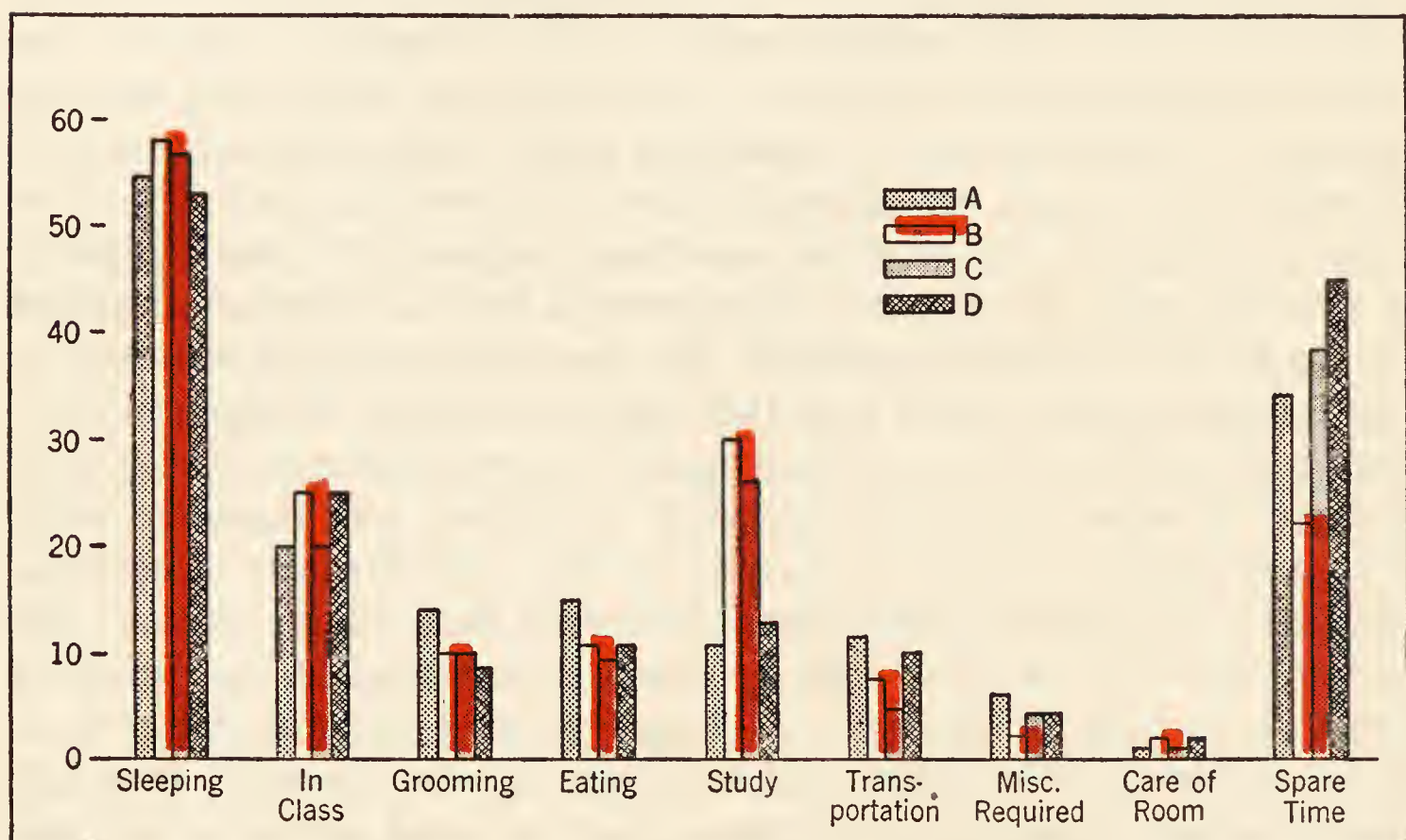


FIG. 25.—TIME SCHEDULES OF FOUR STUDENT NURSES.

It is interesting to compare the weekly estimates of students, even though such estimates show only what students think that they do with their time. The student nurse who, according to her own estimate, devoted the least amount of time to class preparation, studied eleven hours a week; the one who devoted the most time to study devoted forty-four hours to this purpose, in a typical week. The comparison is especially interesting, in view of the fact that all students were carrying a full academic load at the university. All were beginning freshmen who had not yet had much time in which to make their adjustments to new study requirements. The weekly estimates of four students representing three hospital schools are shown in Figure 25. The estimates speak for themselves. If they are reasonably correct, they suggest that a vigorous and thoughtful approach to the problem of study schedule is indicated in many instances.

For further suggestions as to what student nurses are likely to discover if they examine their study schedules, Figure 26 may be inspected. Twelve students, representing three schools, contributed the estimates used in the figure. The twelve were selected on a fixed basis from more than sixty schedules. The students, in this group of twelve, show a wide range in hours devoted to study. When the amount of time used for study is compared with the amount of unassigned time available to each student, the desirability of

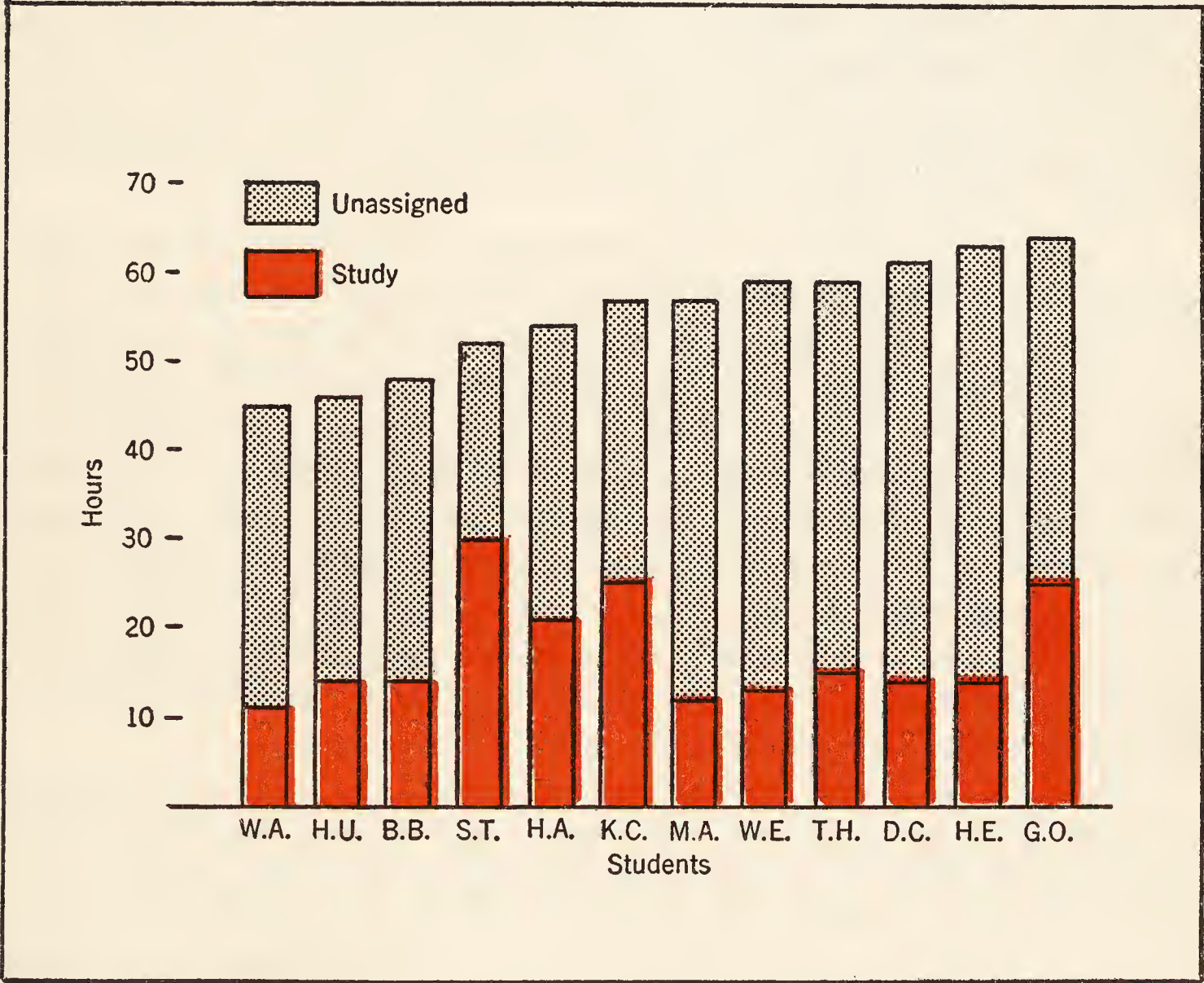


FIG. 26.—ESTIMATES OF TWELVE STUDENT NURSES OF UNASSIGNED HOURS AND HOURS DEVOTED TO STUDY IN ONE WEEK.

making an analysis of schedule is clearly indicated. *Since learning must be self-active*, it follows that one way to improve study habits is to *have an active, aggressive policy in regard to the allotment of study time*. This is something which the student nurse must often do for herself, if required library and study hours are not adequate to her study needs. Having worked out a schedule, she will find it profitable *to study at scheduled study times*, however short the periods may be.

Speed Up Rate of Reading.—One who has been brought up to believe that “slow and steady wins the race”, may be inclined to model his behavior after the plodding turtle whose victory over the less persistent hare is made famous in the fable of the *Hare and the Tortoise*. The turtle, it may be recalled, by moving along slowly but steadily, reached his goal ahead of his racing opponent, the less persevering hare. There are some persons who seem to be sincere in their belief that it is wise to proceed slowly and painstakingly in most undertakings. The student nurse, after a short period of training, is unlikely to accept this idea uncritically, unless it should be in application to such activities as reading. She has usually learned to value speed in motor acts of various kinds, before she has spent many weeks in the hospital school. The desirability of speeding up her rate of reading, however, may not have occurred to her.

In reading, the plodder is at a disadvantage when compared with those who read at a more rapid rate. While it is not true that the faster one reads, the better, it is undoubtedly true that slowness in reading is not a habit to be encouraged. There have been numerous studies of the relation between reading rate and comprehension of what has been read. Obviously, with the same amount of time to devote to reading, the one who reads rapidly can cover more ground, and should therefore be able to get more from his reading. If time were a matter of no importance, it is possible that the slow reader might profit as much from his reading as one who reads more rapidly, but time is usually an important factor to be considered. In the light of studies of reading rate, there appears to be no reason to believe that slowness in reading contributes to one's understanding.

Students differ greatly in their reading speed. In a study of more than six hundred college freshmen, it was found that students who were in the middle two-thirds of the group, as far as reading rate is concerned, varied from 180 words per minute to 300 words.² The upper one-sixth of the class read more than 300 words and the lowest one-sixth read less than 180 words in a minute. The average student read 242 words per minute. In a class of student nurses, a similar variation is to be expected. The average number of words read in a given time depends upon the difficulty of the material, but differences between good and poor readers are practically always in evidence.

It is possible to make a rough estimate of reading rate, but first, we need to appreciate what is happening when we read. The eye, we find, is jerky in its movements. It jumps across the printed page and stops or *fixates* often. Actually, we cannot take in words except when the eye is at rest. The eyes of a rapid reader pause less often than those of a slow reader.

Just how many pauses one may be expected to make in a single line depends, of course, on the length of the line and the difficulty of the reading material. It is commonly reported to be five or six, in a line that is three and one-half inches long. High school and college texts use longer lines so we should expect more pauses, possibly eight to ten.

Although precision instruments are needed for accurate measurement of eye-movements, any student, with the cooperation of an associate, can learn something about his reading rate. If you will gaze steadily over the top of a book at the eyes of a reader, you can see the eye jump, pause, and jump ahead again. You can observe the swing back to the following line after the end of the line has been reached. You may also observe eye movements by arranging a mirror in a book, on the page which is not being read; in the mirror you can observe and count the number of jumps which the reader's eyes make in each line.

By comparing notes, students in a class can find out how great the differences in reading rate may be in any one class. These differences may be due to several factors. A person with a marked visual defect cannot be expected to read as rapidly as one who has no handicap. Poor lighting may account for occasional slowness in reading. Sometimes a person who reads very slowly does so because he is slow in comprehending what he reads. Often, and this is true in most selected groups such as student nurse groups, many slow readers are much slower than they need to be. They read slowly because they have never learned to read more rapidly.

It should not be difficult for most student nurses to teach themselves to read more rapidly. This, of course, does not mean that they should form the habit of skimming. A person is not actually reading unless he understands what is read. The right rate for any one person is probably the fastest rate at which he can comprehend. Any student nurse who undertakes to increase her reading speed will convince herself that learning is indeed self-active.

Learn To Take Notes.—Another difficulty which confronts the student nurse is the necessity for taking lecture notes. To many beginning students this is a relatively new procedure since most high school courses do not make extensive use of the lecture method. The nursing curriculum is so planned as to make frequent use of specialists who, in a few hours of lecture, try to give to students brief summaries of scientific findings which have been developing over a period of years. Obviously, without some organized plan of note-taking, the listener cannot hope to profit much from lectures. To determine to take notes and to be faithful in so doing is not enough; students are sometimes very faithful in trying to take down everything that a lec-

turer may say. Some college instructors who pay particular attention to the study habits of their students believe that there is a relationship to be found between grades and methods used in taking notes. The student who takes down too much does not find his notes as useful as one who has a plan of note-taking. Some successful students outline their notes as they take them down; others go back over their notations at a later time and reorganize them. It is sometimes helpful to jot down questions or to record *reminders* of something to be followed up. This applies as well to notes on readings. The notes which a student nurse takes or does not take are a fairly good evidence of the extent to which she realizes that she who learns best is most active in her own learning.

The importance of learning *actively* applies, of course, to habits of looking up words in the dictionary and many other worth while procedures which contribute to improved study technics.

INTELLIGENT LEARNING IS GOAL-DIRECTED

Can One Learn To Concentrate?—This question is one to which many students would like to find an answer. For help in this connection, we turn to the second of the three suggested principles, *intelligent learning is goal-directed and one who defines a purpose clearly learns better than one who does not*. It is safe to affirm that the definition of a purpose is of the utmost significance. The average student probably recognizes, in a general way, that purposing is important. Psychological experiments indicate how important it is. In one study, adolescents who had taken a test of ability to think, were scored on the use that they made of thinking ability in practical situations.³ As might be expected, they were not as thoughtful in solving practical problems as they were when responding to a test. The success of their problem solution seemed to be related to their purposing more than to any other factor studied. In other words, the study suggests that we can think more effectively when we are strongly motivated than when our purposes are ill-defined.

At this point the reader may very well ask what all this has to do with concentration and the question with which we opened our discussion of goal-directed learning. The formulation of a goal or purpose bears directly upon concentration. We cannot imagine the fraternity pledges attacking their task with eyes and ears wide open to the activities of their fellow students, because we know that they wanted to get their arithmetic problems finished much more than they wanted to know what was going on around them. This sounds a little bit like the old doctrine of *will*, which suggests that we

can do anything at all if we really want to do it. The "will" to concentrate, no matter how strong, cannot be depended upon to launch a student upon the establishment of new habits; it is, however, a beginning, even though a precarious one. Like the freshmen in the study just mentioned, the student nurse can concentrate when she finds her study task more engrossing than distracting sights and sounds. She cannot "keep her mind on" her studying, however, just because she wants, eventually, to be a good nurse. In order to concentrate she needs to find in the *immediate task*, something which challenges her effort. To set goals which are not too far away, and to work toward the accomplishment of these goals, is one way to improve habits of concentration; a person who has a clear purpose is less easily distracted from an undertaking than one who has his goals poorly defined.

Knowledge of Results is Helpful.—A person who defines a purpose in learning but makes no attempt to check his progress, to see how well he may be learning, does not profit much from the statement of a goal. This has been illustrated experimentally. In one study, subjects were asked to draw four-inch lines that would fit certain specifications.⁴ In this experiment they were asked to draw when blindfolded, so they had no opportunity to see how well they were doing. After 3000 repetitions, no improvement at all was made by this blindfolded group.

One does not have to have a bandage over his eyes in order to remain in ignorance of his progress. Many students are figuratively in the dark, as far as appreciation of attainment is concerned. A lack of knowledge of progress might very well be related to difficulty in concentrating. Experimental studies suggest that ignorance of how well or how poorly one may be doing is a real handicap in learning. In one study, young children were practiced in the use of the dynamometer, a device which measures strength of grip. Some of the children, who ranged in age from two to eight, were aware of their progress and others were not told about their success or lack of success. The children who knew about their progress did better than those who were not informed.⁵

Further experiments suggest that in various other fields of learning, *it is important to know results*. In learning arithmetic, for example, children who have a goal defined and know how effectively they may be working, appear to have an advantage over those who have no measure of their progress. This has been indicated in numerous studies. In one investigation, 358 children in the fourth grade were divided into two groups and given exactly the same drill in arithmetic, during a weekly fifteen minute period.⁶ The experiment extended over twenty-one weeks. One group, as in all similar studies, had no knowledge of the success or failure of their efforts. The

other group kept progress records of individuals and of the group as a whole and made graphs to show their growth. The informed group proved superior to the group which had no knowledge of success or failure, except in the case of those who did most poorly. Knowledge of results apparently contributes to the progress of all except the most incompetent students.

Studies of adults also indicate that it is helpful to know results. Workers in industry are sometimes motivated to increase their output by some type of progress record which they can see. University students who keep themselves informed on their success or non-success often seem to have an advantage over those who do not know how well they may be measuring up to standards. This has been demonstrated with adults who have been the subjects of experimental studies. In general, students can define many of their own goals and can evaluate their own success without arbitrary measures such as grades.

Look for Means-End Relationships.—So far we have suggested that it is best for the learner to be motivated to learn, as in the case of the fraternity pledges who had a strong incentive to work arithmetic problems correctly, and that it is even better to have a goal related to the immediate task and to check progress toward that goal. Both steps contribute to ability to concentrate, as well as to other aspects of effective learning. The next step in efficient purposing is, perhaps, to analyze study methods in the light of results. Implied in all proposals, is the assumption that the learner *cares about learning* and that progress is satisfying.

It appears that the consequences of a certain way of behaving influence the *learning* of that behavior, *if the learner sees the connection between his activity and the results of his activity*. In terms of the student and his study procedures, this means that he might conceivably, have all sorts of study outcomes, both satisfying and dissatisfying, and might still not modify his study methods at all. If, for instance, a student nurse, who studied at regular periods, took notes carefully, and in various other ways studied effectively, were to be commended and given a high grade in a course, she would not necessarily be stimulated to analyze her study habits. She would not know whether her success were due mainly to her time schedule, for example, her note-taking habits, to certain other habits, or to a combination of all. In fact, she would probably not make any attempt to analyze her methods. If, however, she were to discover that a certain procedure, such as looking up words in a dictionary was directly related to her success, then she would probably encourage herself to make the use of the dictionary habitual. On the other hand, a nurse who is relatively unsuccessful, as measured by grades, does not necessarily make any change in her habits of study.

She might be greatly concerned about her rating, and might find the results of her studying highly *unsatisfying* but, unless she could trace a connection between certain specific procedures and the outcome of these procedures she would probably not give up the faulty habits involved.

INTELLIGENT LEARNING INVOLVES A SEARCH FOR MEANINGS

Avoid Study of Fragments.—Once in a while a student comes upon something in his reading which does not seem to make sense and no matter how many times he may read it, it still remains unclear. If he would continue to read further, instead of puzzling over a fragment, the meaning in many instances would become apparent. To illustrate, suppose that you read the following: *Mary came down the street with her slyx*. What a *slyx* may be is anybody's guess. There is nothing to indicate whether it is one or more than one, whether it is animal, vegetable or mineral. Continuing, you read: *She held the slyx in her arms*. You still do not know what she may be carrying, but you at least know that she is not wearing it and that it is not walking. The chances are, also, that it is not very large. At this point you may be saying: "I know what it is—it is a baby." Or perhaps some of you may be about to conclude that it is a dog, cat, something to eat or something to wear. Read on, and you find that, *She buried her face in the slyx and breathed deeply*. Your guesses do not seem entirely satisfactory, now, so you continue to read, *As she entered the house she said, "Look what Bill sent—I must find some water."* You still cannot be at all sure that you have grasped the exact meaning of what you have read, so you read further until you learn that *Mary put the slyx into a vase and put the vase on the bed-side table*. It now appears that *slyx* probably means a flower or flowers, but you read on and check your conclusions in the light of what follows. Perhaps we should say that you check your conclusions, if you have formed the habit of looking for meanings in the context.

That not all students have formed the habit of reading meaningful wholes is self-evident, as illustrated by the following:*

The class had wrestled with that harp that moldering long had hung
and was trying to visualize the scene in the opening stanzas. . . .

"The stag at eve had drunk his fill
Where danced the moon on Monan's rill,

* Ward, C. H. *What Is English?* New York: Scott, Foresman & Co., 1925, pp. 444, 445.

And deep his midnight lair had made
In lone Glenartney's hazel shade.

.

Tossed his beamed frontlet to the sky

.

A moment sniffed the tainted gale.

.

With one brave bound the copse he cleared."

The teacher detected something peculiar in an answer to a very commonplace question about this setting of the poem. . . . He was curious to find out what mental picture was in the mind of this boy who answered so oddly. . . . He inquired, "What is a stag?" . . . the boy's answer was not taken from *Judge* or *Life* but was given in an actual classroom. He replied, "Why-uh, a stag is—is when a fellow hasn't got a girl." . . . Think what a notable passage of literature meant to that boy. It was this sort of stag who had drunk his fill—not improbably, he had been drinking at Monan's Grill. It was this sort of stag who made a "lair" at midnight. What the beacon red was, or the warder's call, or the beamed frontlet, will never be known, but we can guess at "the tainted gale"—it was natural for a stag who had been at Monan's until midnight. We know about the copse. The boy had pictured this kind of stag, after this kind of night, as having the vitality to leap over *several cops*.

The incident illustrates another point made earlier in this chapter. As it happened, the boy, in this case a high school freshman, never did get the meaning of *stag* from the context. One quick reference to the dictionary might have made of the *Lady of the Lake* something far removed from a most unpoetic narrative of human shortcomings.

Study Meaningful Wholes.—One mark of a person who studies intelligently is his habit of organizing his learnings. In his reading or in responding to lectures, he looks for patterns and tries to see how the parts of a reading assignment or a lecture fit together. We can illustrate what is involved in looking for a pattern with an exercise which is frequently used, in some form, in tests of intelligence.

As quickly as possible name the digits which should
be used to fill in the vacant spaces:

1, 2, 3, 4, 3, —, —.
2, 4, 6, 8, 10, —, —.
3, 4, 6, 9, 13, —, —.
2, 4, 3, 6, 5, —, —.

There is only one successful approach to problems of this type,—to *examine each part in relation to the whole series*. A recognition of the relatedness of all that he may read, under a certain head, is of inestimable value to a student. A concrete suggestion, in this connection, is to read all of a new chapter assignment, hastily before concentrating on sections. Later, the chapter can profitably be studied in more detail, including attention to charts and tables. In proceeding this way, it is possible to discover a thread of thought, running through an entire assignment. It is by such procedures that general principles may be discovered.

Organize Notes.—A further help in clarifying the meaning of an entire assignment and in discovering how each part fits into the whole is to organize notes on readings. For the greatest benefit, these should usually include a whole chapter, or a part of a chapter, which is complete in itself. Students often question the value of outlining readings. As an aid to memorizing isolated facts an outline is of no great value. As a means of *discovering relationships*, it is a procedure of unquestioned value. Note the emphasis on *discovering*. Organizing one's own outline is far different from copying the plan of the author. It is the personal, creative organization of the reader which is of greatest value to him.

The same plan of note-taking is suited to lecture notes. As has been said, students who tend to write down everything that a lecturer may say are far less likely to discover the meaning of his talk than those who take notes more sparingly and more critically. There are several ways in which a listener may *personalize* a lecture. One is to try to follow the speaker's outline and to take notes in outline form. Because a lecturer seldom announces his headings and sub-headings, there is a stimulating amount of discovery upon the part of the listener who uses this procedure. Another method is to write down questions as one listens. Outlining or questioning, at first hand, is undoubtedly more economical of a student's time than writing at full speed and without discrimination. Whatever method of taking lecture notes a student may adopt, some plan of reorganizing notes during a later study period is necessary if one is to have a sense of discovery as he learns.

Look for Principles.—It has been experimentally demonstrated that we remember and use general principles better than isolated facts. In one study, children in the second grade were divided into two groups for purposes of comparison.⁷ Both groups were taught the same arithmetic combinations and both were given periods of drill. The children in one group, however, were encouraged to discover principles for themselves and to organize their procedures accordingly. In the other group, children had no opportunity to discover principles, because the answers were always given

to them. After eight months of this differentiated practice, the children who had been encouraged to discover principles learned new processes more readily than those who had no such fortunate teaching.

The habit of looking for principles in what she reads and hears should be of particular value to the nurse in training, because it is so necessary for her to remember and use what she learns. One way to make sure that principles are understood is to illustrate them. If the illustrations can be drawn from the professional experiences of the nurse the principles are even more likely to be remembered and applied.

We have been considering study problems in general. Now we are ready to examine some specific problems which confront the student nurse. Her curriculum, even though it is highly professionalized, is marked by great variety. She learns certain motor skills which she must perfect before she can be an efficient nurse. She must become familiar with a technical terminology in preparation for active hospital routine. She explores a world of physical science in order to learn essential facts. She learns something about the background of her profession, so that she may be better able to appreciate progress in the field. She becomes acquainted with standards by which she is to judge her professional behavior. The broad principles of learning which we have just considered can be applied directly to specific situations.

LEARNING MOTOR SKILLS

The acquisition of motor skills has long been of interest to the psychologist. The student nurse, also, is concerned about this important aspect of her program. We shall not attempt to list the many motor learnings of the nurse in training, because the principles which govern motor learning in one situation apply in most others. For illustrative purpose we can use bed-making as typical of many motor learning situations.

Learning Is Self-Active.—In teaching motor skills, bed-making for example, a highly skilled person demonstrates procedures while the students watch. If learning is always self-active how may a student profit from such demonstrations? We cannot imitate an activity which we have not tried out. A plumber, for example, cannot imitate a surgeon, no matter how carefully he observes him. How does self-activity fit into the picture in the case of a student who watches the expert make a bed?

Use of a Model.—The student nurse cannot immediately copy the bed-making technics of a skilled demonstrator. Before she can practice, she must learn from the teacher just what is to be done and the order in which one activity is to follow another. After she has set her goals, she practices. Later,

she turns to the model again, in order to *check her performance against that of the expert*.

Does Practice Make Perfect?—The answer is not as obvious as might at first appear. We readily recognize the fact that we cannot acquire skills, such as those involved in making a bed according to hospital specifications, merely by watching another person demonstrate the routine. We know that we must practice in order to learn, but it is not always so self-evident that when we practice we do not always learn what we hope to learn. As a matter of fact, we sometimes impede learning through practice of the wrong kind. Take for example, a simple case of a student who is practicing technics involved in turning the corners of the bottom sheet. If she practices, continuously, any procedures other than the ones she is supposed to learn, she not only is not learning to make corners according to specification but, through faulty practice, she is actually handicapping herself. Precision in the practice of motor skills is of the utmost importance in learning. It is an ideal which student nurses are commonly urged to adopt. Psychological studies suggest that urgings along this line are psychologically sound and are not mere preachments. Precision can be learned only by practicing precisely.

Intentional Practice of an Error.—Sometimes, *after an error has become automatic*, it is possible to correct the error by practicing it deliberately. This procedure must not be confused with wrong practice during the learning of a skill. If it has any value, it is in eliminating a faulty practice which persists in spite of a learner's efforts to change it. This is Dunlap's theory of *negative practice*.⁸ According to this theory, a nurse, for example, who continuously lapses automatically into a wrong procedure in turning the corners of the bottom sheet, might practice that wrong procedure intentionally. There have been varied studies to test this theory, but the status of the theory of negative practice is still somewhat uncertain, pending more research along this line. It is sufficiently established, as a *theory*, to make it desirable for students to try it out occasionally, remembering, always, that only *automatic* errors should be included in any experiment which might be made.

Learning Is Goal-Directed.—In motor learning, the definition of a goal is most important. In the case of bed-making, goals are often defined in terms of hospital standards for the *finished product*. If the bed meets all specifications, the student nurse knows that she has done well. As we have seen, psychological studies indicate that we are benefited by knowing how well or how poorly we may have done. *Speed* in performance is also a common measure of skill. It is implied, of course, that speed is not at the expense of precision. There are other measures of success which are known

to the learner himself much better than to any of his observers. In the learning of nursing skills, the *reduction of muscle tension* is a significant evidence of progress. The *discarding of unnecessary motions* is another measure of learning. The *smoothness or rhythm* of her performance is a further measure of a student nurse's accomplishment. The student herself is the best judge of her success as measured by standards such as these.

A recognition of means-end relationships, as we have noted, is an aid to efficient study. It is also helpful in learning motor skills. In the case of the student who is attempting to improve her skill in making a bed, an analysis of her procedures, in the light of results, is of great value. Consider, for instance, how she might help herself if she has difficulty in making the bottom sheet tight. By examining her procedures carefully she may be able to locate one faulty performance which is, perhaps, the source of her non-success.

Consider Total Learning Situation.—The principle suggested earlier, that we are intelligent in our learning when we react to wholes instead of to fragments, is especially applicable to the learning of motor skills. In perfecting complex skills, we practice *whole performances* instead of the separate acts which constitute the whole. A person who learns to drive a car must learn how to steer, shift gears, to start, stop and alter his speed, to mention only a few of his accomplishments, but he cannot learn to drive by practicing each step in the complete procedure. In learning, he must fit all these acts together. His muscles must learn the *pattern* of the *whole performance*. Similarly, in learning to swim, one must acquire correct arm, head, and leg motions and must, among other specifics, learn how to regulate his breathing, but, no matter how zealously he might practice each of these skills separately, he would not learn to swim.

Bed-making, our illustrative professional skill, is comparable to the two accomplishments just mentioned. In learning to make a bed, first when empty and later when occupied, the student must practice many specific skills, but like the driver and the swimmer she needs to practice the needed skills in sequence. In this way only can she learn the pattern of the whole accomplishment. In this way only can her muscles be taught to respond to the cue of each act in the chain.

Does this mean that the nurse should never concentrate upon one step which may be especially difficult? The question should not be answered dogmatically because it depends upon the stage of learning. In initial learning of a separate skill which is a chain in long series, it seems advisable to practice the one step just enough to make the next step possible. It is the *pattern* of the whole performance which must be learned. After she has

practiced the whole pattern with a fair degree of success, she can no doubt profit from practice on a single aspect.

Characteristics of Motor Learning Curves.—*Initial Learning Is Often Rapid.*—The perfecting of professional skills is usually gratifying to the student nurse, because she has direct evidence of her progress. This is especially true of the initial stages in the acquisition of a motor skill. Rapid learning, at first, is characteristic of many motor skills. This is due, no doubt, to the fact that the simplest procedures are learned most easily and, therefore, most quickly. Another reason why progress is rapid at first is because it usually does not take long for the learner to grasp the idea of what is involved in the whole accomplishment; as soon as the pattern is comprehended, learning proceeds for a while, at a rapid rate. However, if one were to keep a careful, day by day record of errors made or of the amount accomplished in a certain period of time, it would be apparent that progress is not even. With succeeding practice periods the amount of improvement tends to decrease slightly. During this time, although the learner is progressing, he is often progressing at a diminishing rate.

Plateaus Are Common.—With most persons there comes a time in the learning of certain skills when they no longer seem to progress. This phase is far less gratifying than earlier stages in learning, when improvement is marked. A period of no apparent progress is called a *plateau*. The name speaks for itself. It is desirable that students should know that plateaus are common, otherwise periods of no improvement might prove discouraging. On the other hand, it is probably unwise to conclude that everyone must experience plateau periods in all motor learnings.

Plateaus, when they do occur, may be due to a number of factors. There are experiences common to most learners which explain many such levels of no improvement. Sometimes the learner is held back by personal factors: he may have lost his zest for the activity and so may not be putting forth a maximum effort, or he may be allowing other tasks to distract his attention from the job at hand. There is usually something about his methods, also, which could account for his failure to improve. Sometimes a plateau is due to the fact that all the easier aspects of the task have been mastered and there is an accumulation of difficult phases which must be perfected in order to progress. Often, the learner has hit upon a routine which is not quite efficient enough to permit improvement. This is one of the most common causes of the plateau. Analysis of methods often spurs the learner on to further progress.

Occasionally, in some specific skill, it is possible for a person to reach his *physiological limit*. If so, he cannot better his performance. In skills

such as those which the student nurse is learning, it is most unlikely that a true physiological limit will ever be reached, however. In the skill aspects of her training, as in other learnings, plateaus are usually indications of some change that needs to be made.

SUBJECTS NECESSITATING MEMORIZATION

It is an accepted principle in modern educational theory that we should, as far as possible, learn what we need to learn at the time that we need to use it. The student nurse has less opportunity to apply this principle than those in many other professional fields because, while she is taking her training, she is responsible for the welfare of others. She must, therefore, learn many terms and facts in advance of the time that she is to apply her knowledge, so that no innocent person may be the victim of ignorance upon her part. This means that she must, of necessity, devote time to the memorization of some essential content. It is true that there is no subject in the nursing curriculum in which meaning is not stressed and principles outlined, but there are some courses which demand a relatively large amount of memorizing. Aspects of the biological and physical sciences come under this head as well as the terminology of nursing arts.

Learning Is Self-Active.—We have had occasion to repeatedly restate three characteristics of intelligent learning: it is self-active, goal-directed, and meaningful. That memorization involves a large amount of self-activity no one will question. Psychological experiments suggest that certain kinds of self-activity are especially effective in memorization. There have been numerous studies of the relative values, in memorizing, of reading, re-reading and reading combined with recitation. Since so many students are inclined to depend largely upon mere reading to fix important items in memory, several studies are included here.

Reading, Re-reading and Testing.—Five classes of University students studied factual materials in three ways.⁹ One group read the material just once; one group read and re-read it; a third group read the material and then took a completion test on the content read. After the different learning situations, all three groups were given the same test. The re-reading group excelled the two others. One week later, all groups were tested again. This time the re-reading group was better in retention than the single reading group, but not significantly better than the group whose reading was followed immediately by a completion test. From this one study it appears that reading once is the least effective way to study content that is to be memorized.

Recitation and Recall.—Students commonly associate recitation with a classroom situation in which pupils recite at the request of the teacher. Recitation is not essentially a social performance; it is a study procedure which can be used profitably by the student. The value of some form of recitation in fixing content in memory has been experimentally demonstrated. In one experiment, *recitation* was individual.¹⁰ Each student, after reading, attempted to recall what he had read and referred to his material only to prompt himself if necessary. Different groups allotted varying amounts of study time to recitations. In both studies, one group devoted all study time to reading and no time to recitation; one group devoted 80 per cent of study time to recitation and only 20 per cent to reading; and other groups experimented with smaller amounts of recitation.

Both studies suggest that it is not advantageous to devote all or even the greater part of study time to reading. The nature of recitation, of course, depends upon the nature of material to be learned; recitation can mean anything, from verbatim repetition, to organization of ideas. In both experiments, students who devoted at least 60 per cent of study time to some form of recall did best. The student nurse, to whom precision in memorizing is so important, might profitably do a little experimenting of her own to discover what might be the best procedure for her. She might, for example, after reading an assignment, try short periods of reading with immediate attempts at review, going back to harder parts as often as necessary and testing herself in whatever ways seemed helpful. If experiments such as the ones cited, coupled with her own experimental procedures, did nothing more than convince the student nurse that reciting is one way of studying, they would serve a worth while purpose.

Students often use recitation, informally, when they practice terms which they hope to fix in memory. The student nurse, for practice purposes, undoubtedly uses new anatomical and other scientific terms in her every day conversation. Because she is associated with others who share her problems she has many opportunities to do this. Once she is convinced of the value of recitation (review of various kinds), she can create many situations in which to practice her learnings informally.

Overlearning Is Necessary.—Some students memorize study materials just well enough to carry them through a class period without too great risk of embarrassment. The student nurse is usually more far-sighted because she realizes that she is learning material which she will need to remember, not for hours or days, but for years. She does not, however, always appreciate the fact that she needs to *overlearn* almost everything that she studies. We are referring, of course, to factual content which is to be memorized.

There are certain materials which we have all learned so well that they cannot be forgotten. We all recall today certain bits of knowledge which we overlearned in childhood. We have used them, not once but innumerable times, and thus have fixed them in our memories so that we can never forget them. In memorizing professional content for long time use, we need to continue to work on it long after we think that we have learned it. The desirability of overlearning some aspects of the nursing curriculum is clear.

How Shall We Distribute Study Time?—Given a certain amount of time which can be devoted to study in one week, it is better to study each subject for one long period weekly, or to distribute throughout the week the time to be spent on each subject? There have been many experiments designed to answer this question. In general when the object is memorizing, it seems to be most efficient to study a given subject at stated intervals and for relatively short periods. A student nurse who attempts to learn a long list of new terms in the course of a week will, presumably, find that it is better to study more often and for shorter periods than to set aside a single block of time for the purpose. If, for example, she could devote two hours to memorizing a certain assignment, it would probably prove advantageous to study for half an hour or less at each period and to scatter the four or more periods throughout the week.

The distribution of time which is best depends somewhat upon the individual and upon the content which is to be learned. As in the case of recitation, a certain amount of first hand experimentation seems to be indicated. Knowing that, as a general rule, in memorizing, relatively short study periods, at intervals, are deemed desirable, each student can work out a plan which seems best suited to her and to the material which is to be memorized.

Learning Is Goal-Directed.—The definition of a goal is as important in learning content which is to be memorized as it is in learning a motor skill, because a sense of success in achievement is an aid to further learning. In learning factual materials, a student nurse usually needs to set her own standards, if she is to have any real measure of the success of her study methods. Whether she is to feel that her accomplishment is satisfactory or not depends upon her own personal *level of aspiration*; a sense of success is highly subjective and individual.

What We Do After Learning Is Significant.—In learning content which involves a large amount of memorizing, it is important to carefully plan the sequence in which subjects are to be studied. It is possible that material studied during the second half of a period may actually interfere with another subject which has been partially learned during the first half

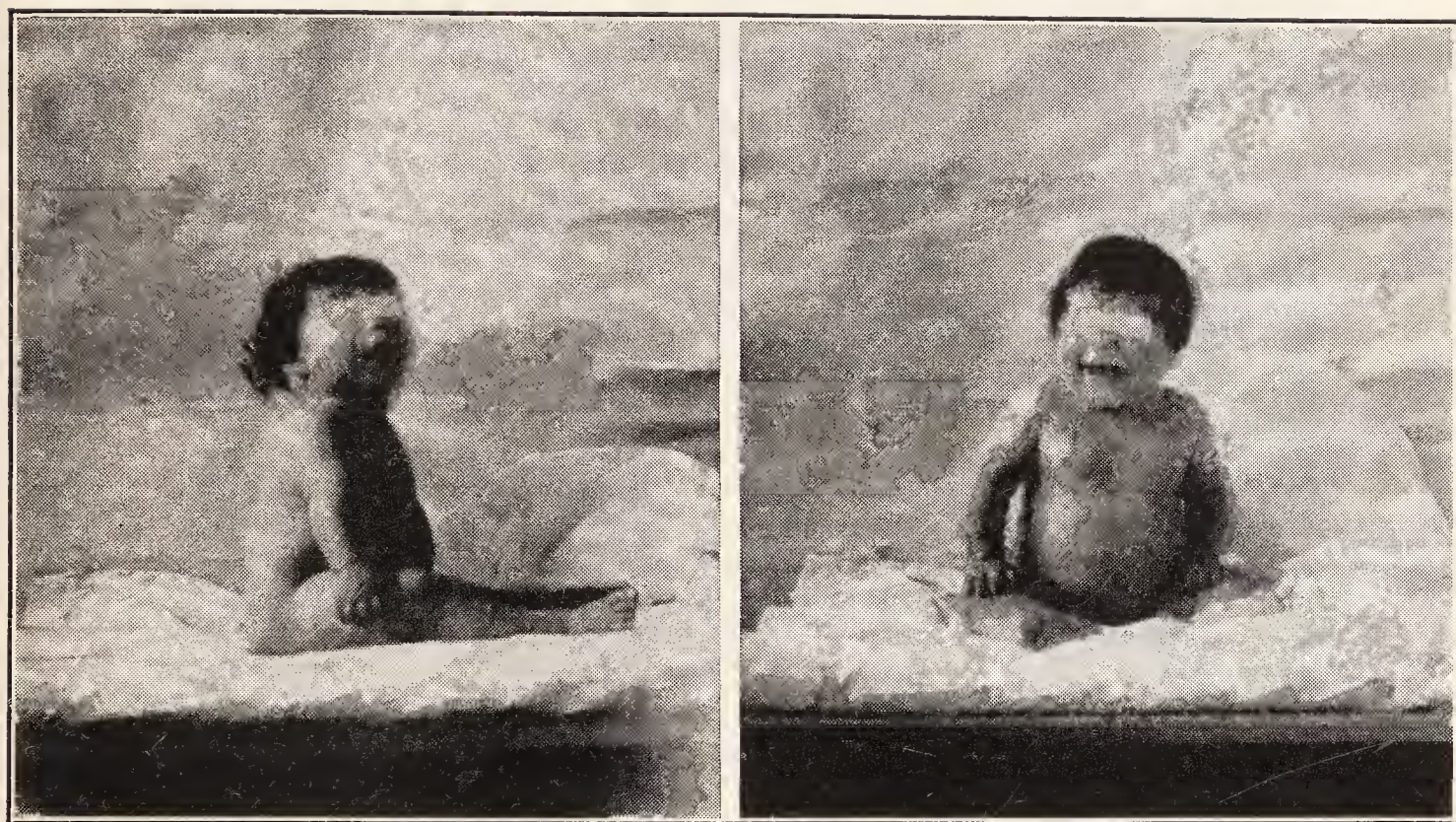


FIG. 14.—A CRETIN AT THE AGE OF 15 MONTHS.

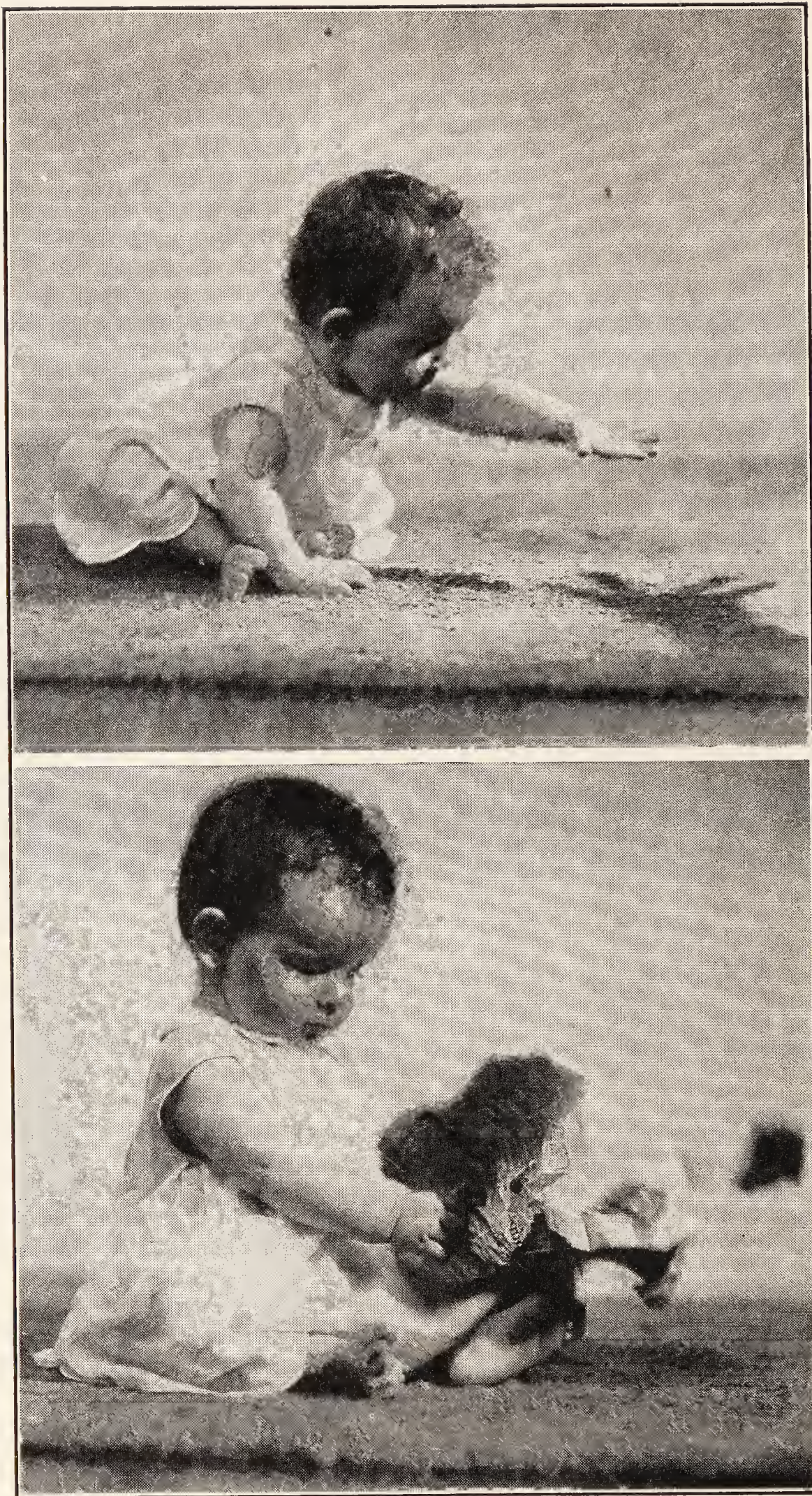


FIG. 23.—MOTIVATION IN BABYHOOD.

Watch her maneuvers when she discovers a moving shadow. See how joyously and vigorously she pokes at a crumpled newspaper.



FIG. 23.—MOTIVATION IN BABYHOOD (cont.)

And note her absorption in a new toy, her delight with the three rings. She is an adventurer in a world made for discovery. (Photographs by Lena G. Towsley. Reproduced by permission of *Parents Magazine*.)



FIG. 35.—BLOT PICTURES.

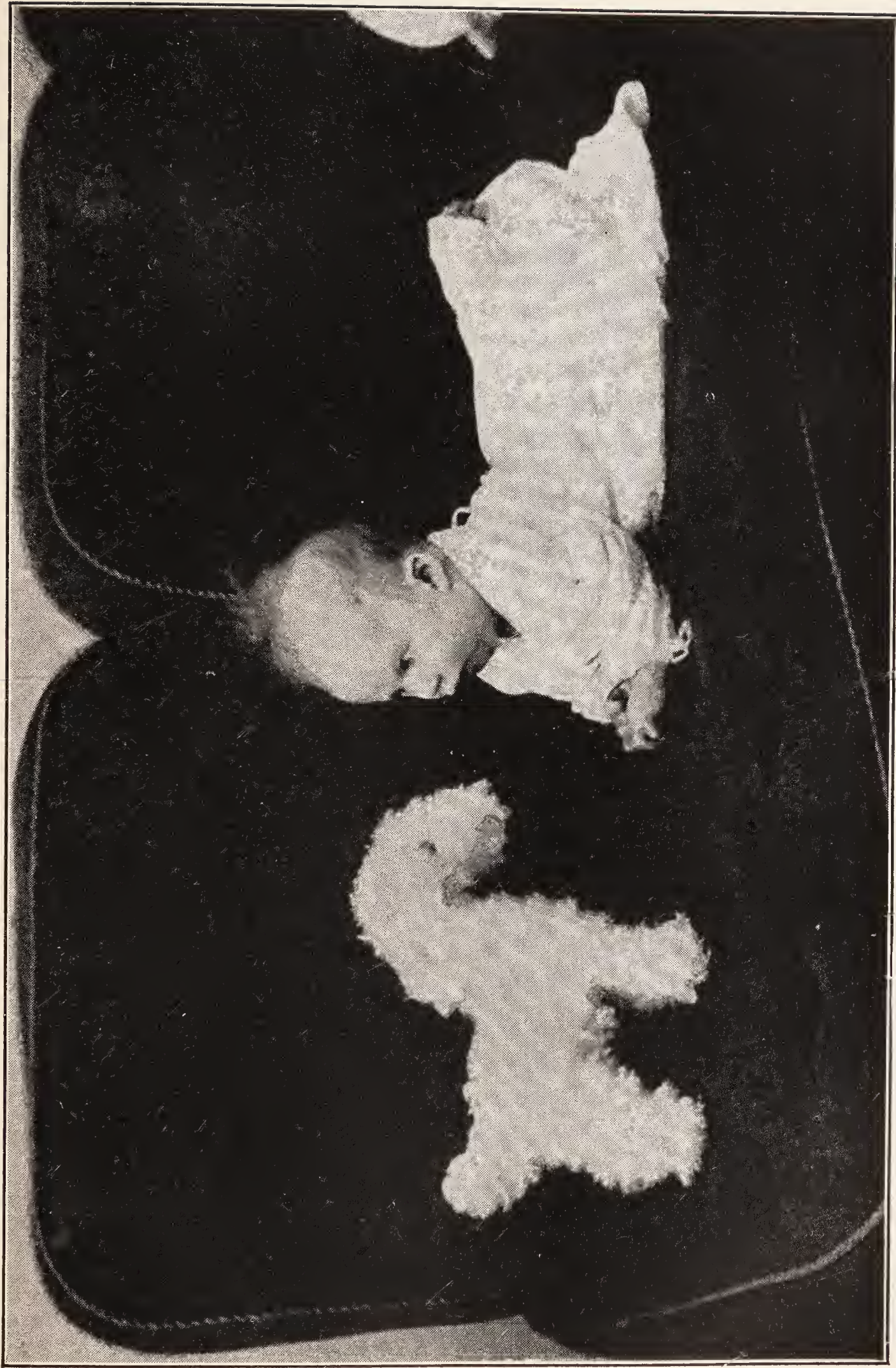
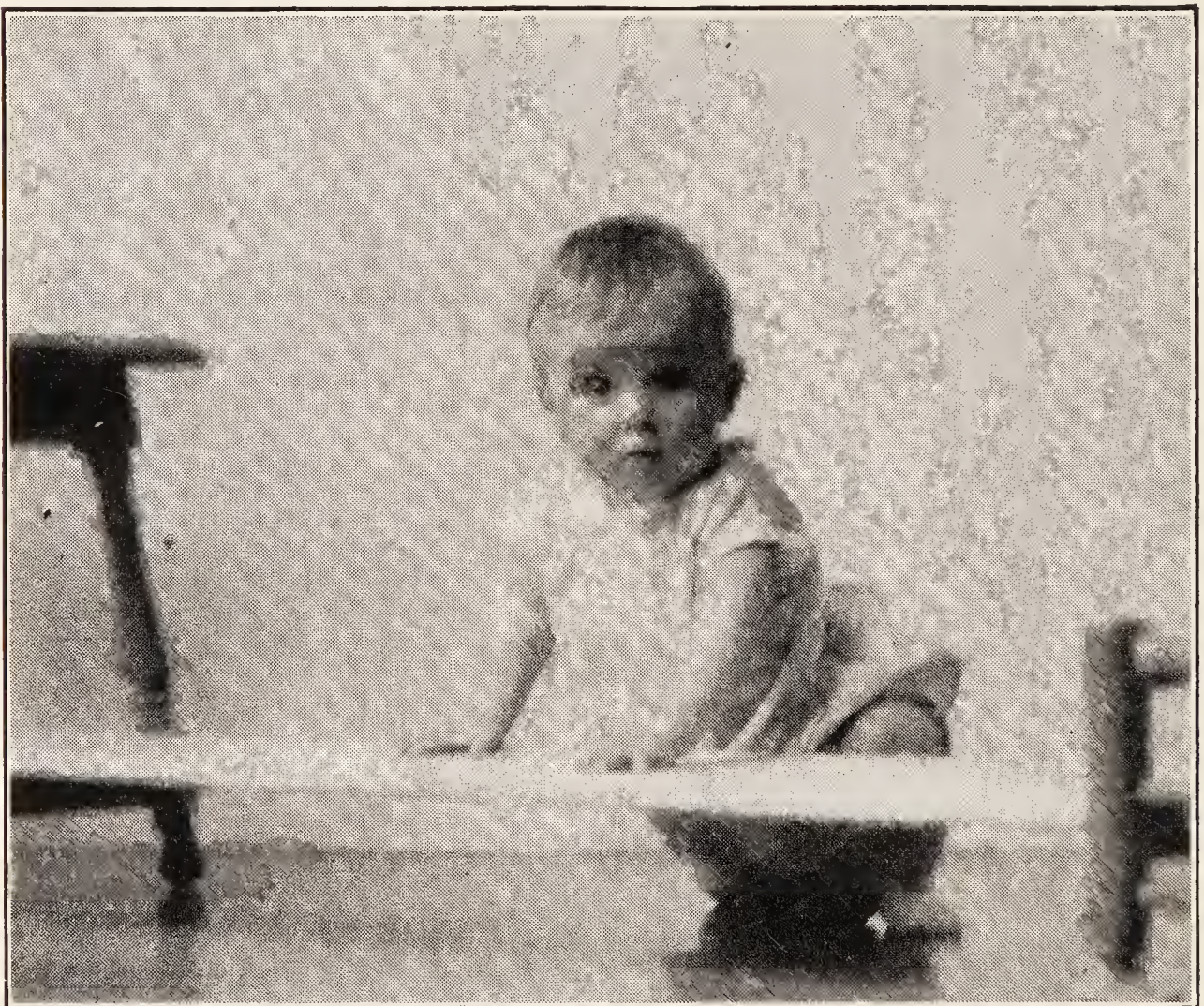


FIG. 38.—AN ILLUSTRATION OF BODILY TENSION.

(Picture by Charles A. Lux, reproduced by courtesy of Mr. Lux and the Detroit Free Press.)

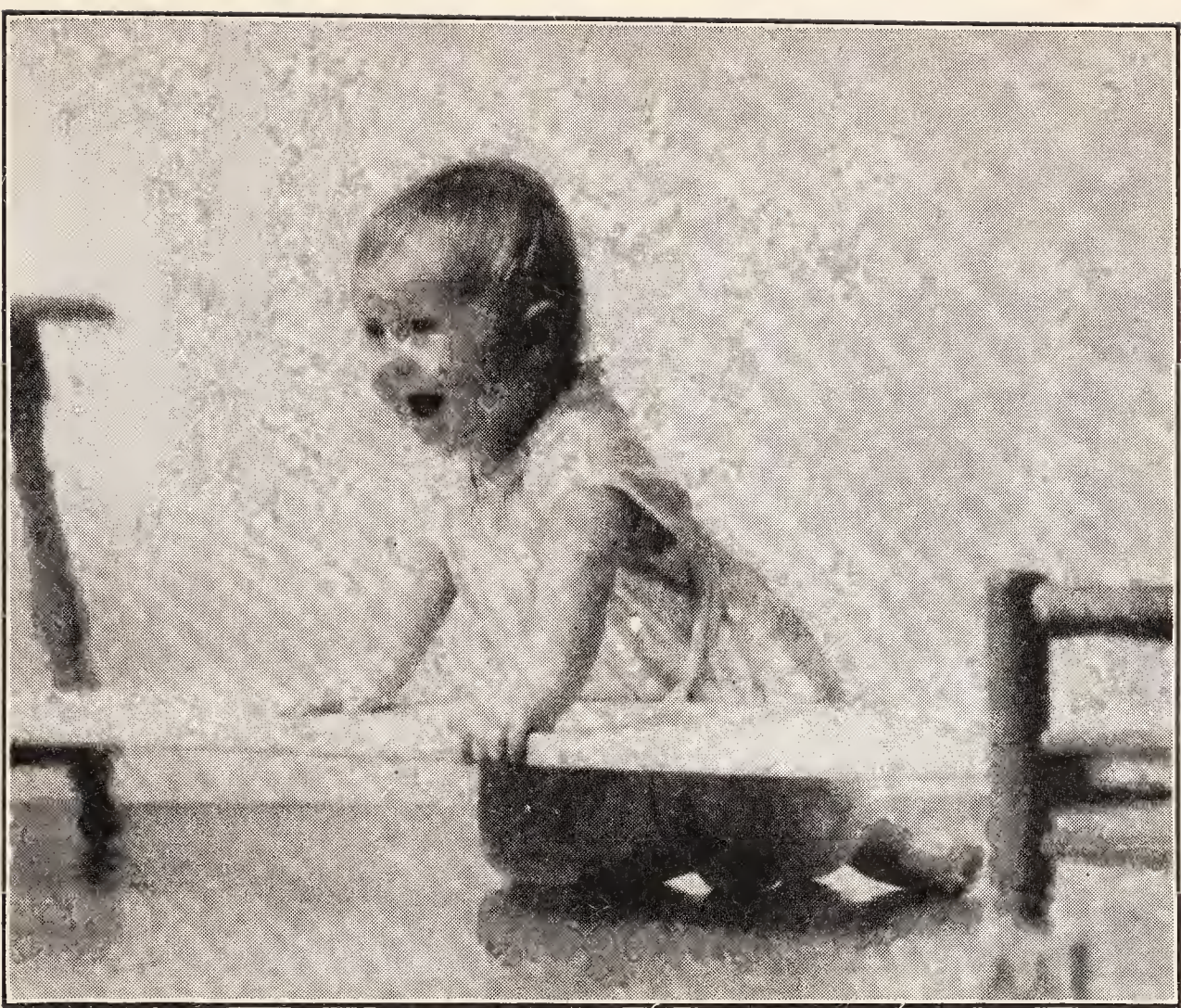


WHAT'S IT ALL ABOUT?

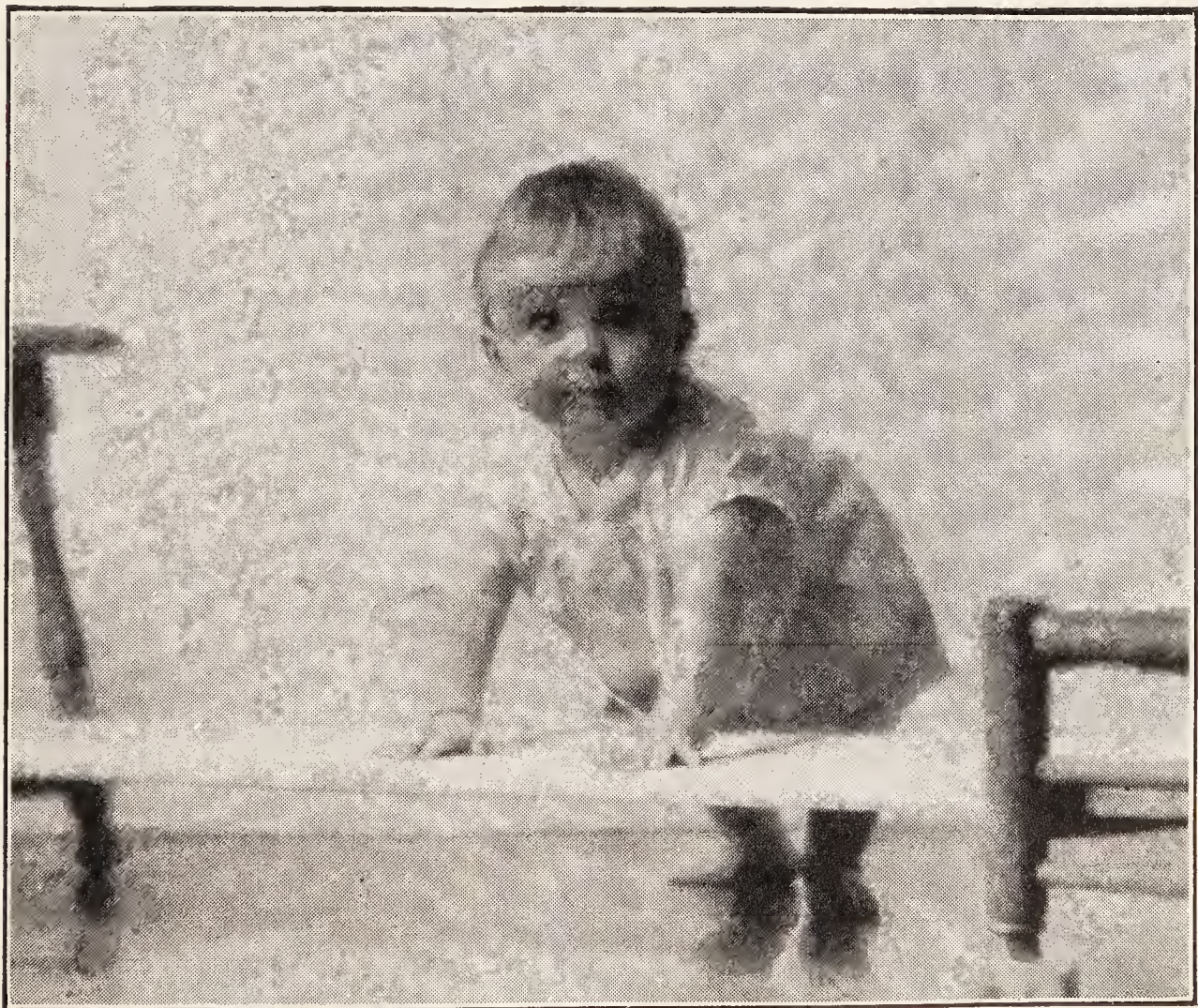


CLIMB OVER THIS BOARD?

FIG. 42.—CONFRONTED BY A PROBLEM AT THE AGE OF ONE YEAR.



ALL RIGHT—HERE GOES!



HARDER THAN IT LOOKS.

FIG. 42.—CONFRONTED BY A PROBLEM AT THE AGE OF ONE YEAR (cont.).

Photographs by Lena G. Towsley. Reproduced by permission of *Parents Magazine*.)



FIG. 51.—HIS IDEA OF THE WORLD.
(Reproduced with the permission of John T. McCutcheon.)

of the study period. As a general rule, it seems to be best to separate in time subjects which are somewhat alike, to avoid the danger of confusion due to their similarity. In learning technical material in bacteriology, chemistry, and physiology, for instance, it seems to be advisable to separate them in planning a schedule of study. Preparation in bacteriology might very well be followed by an activity which is totally unrelated to bacteriology and one in which memory is not stressed. Once more, it appears that the student nurse, herself, needs to discover, for herself, just what order of study seems to be most efficient.

Learning Is Meaningful.—*Shall We Memorize Wholes Or Parts?*—In memorizing a list of nursing arts terms, the action of certain drugs, chemical formulae and similar assignments should the student nurse concentrate upon small parts or should she study each assignment as a whole? The question cannot be answered directly because older experiments in the field of whole or part learning are somewhat contradictory. Some studies have suggested the superiority of the whole over the part method. Others have indicated that the part or progressive-part method may be superior in memorizing. By progressive-part method is meant learning a part, adding to it, going back and repeating both parts, adding a third and repeating all three, and so on. Later studies suggest that there is less contradiction in older investigations than is apparent.¹¹ In learning a poem, for instance, a single stanza may be a reasonably complete unit; a person who learns a stanza, instead of a whole poem, may actually be learning a whole. Any part which has unity and meaning in itself may be regarded as a whole. If the material to be memorized can be organized into *related parts* it will probably be efficient to learn the assignment as a whole, returning to certain parts for additional practice as needed.

In applying the results of investigations of whole and part or progressive-part learning to her own study the student nurse has several alternatives. If she cannot find a thread of meaning running through the material which she hopes to memorize, she might as well choose her own method of study. Perhaps she will concentrate upon fragments, learning bit by bit, or she may profit from use of the progressive-part method. It is not likely, however, that there will be many assignments which she cannot organize into meaningful units of some kind.

The implications are clear in anatomy, in which it should be relatively easy to study names and functions in groups which constitute meaningful units. Similarly, in *nursing arts* terminology, a classification according to some plan related to various nursing procedures would appear to be feasible and helpful. In all studies in which there is much basic content to be memorized,

it is advisable to study meaningful units, as far as possible, because it is safe to assume that the more meaningful the content the better the retention.

STUDIES IN WHICH MEANINGS ARE STRESSED

The division of the nursing curriculum into skills, subjects involving much memorization, and studies in which meanings are stressed is obviously arbitrary. The student nurse is seldom, if ever, called upon to learn by pure rote. In perfecting motor skills she is not performing as an automaton. In memorizing terms and principles she is not learning them as one might commit to memory a series of nonsense syllables. Her curriculum is professionalized and therefore full of meaning to the nurse. It is true, however, that certain study procedures are better suited to some aspects of the curriculum than to others. It is for this reason that the classification is suggested. A word of caution is perhaps indicated at this point. No one *subject* can be classified as a subject to be memorized, and certainly none should be excluded from a list of subjects in which meanings are stressed. There is obvious overlapping, but within each subject, procedures can profitably be varied.

Development of Understandings and Appreciations.—In some aspects of the nursing program, rote memorization of terms and facts is not only unnecessary, but highly undesirable. There are some courses which aim primarily to contribute to the student nurse's *growth in understandings and appreciations*. In such courses factual content, while necessary, is of value only when organized, integrated and used. In studies such as history of nursing and psychology, for example, facts cannot stand alone. Unless their relatedness can be seen and appreciated they are of little if any value to the student nurse.

Know Purpose of Course.—The student, as well as the instructor, needs to know the fundamental purpose of any course which she takes. Many students become confused because they try to study all subjects in the same way. A recognition of what one is supposed to get from a course is an essential first step in intelligent learning. To illustrate, consider history of nursing and psychology. In both subjects a basic purpose is to contribute to the growth of the individual student: to add to her understanding, or insight, and to enrich her personality through the expansion of her appreciations. History of nursing helps the student to get a perspective on her profession. In the light of past developments she is guided to appreciate the opportunities of the present. Psychology helps her to understand her

own and other person's reactions and to be increasingly appreciative of human behavior.

Look for Inter-Relationships.—How may a student help herself to develop understanding? As has been said frequently, she must look for meanings. No one person can give a meaning to another; meanings can only be discovered. History of nursing offers endless opportunities for personal discovery. A student nurse who learns dates, events and personalities, and does not attempt to fit them together, is denying herself one of the greatest satisfactions of being a student. In her study of psychology, the same principle holds good. The student cannot expect to benefit much from a mere memorization of experimental findings and principles. Psychology is of value only to the extent that it is used. An old Oxford motto is applicable here:

“He who reads and reads
And does not what he knows,
Is he who plows and plows
And never sows.”

In order to learn psychology so as to use it most effectively the student should lose no opportunity to generalize. Generalizations will be remembered long after facts leading to the generalization are forgotten. This suggests the advisability of looking, at all times, for principles governing human behavior. In her everyday life the nurse has constant opportunity to test the soundness of her generalizations. It is a good practice to try to illustrate all psychological principles, because the habit of illustrating not only pays large returns in understanding of the subject, but it offers a fertile field for personal discovery.

Test Personal Growth.—Examinations in courses such as history of nursing and psychology cannot measure all phases of a student's growth. They can test fairly well her knowledge, her understanding of principles, and her ability to make applications of what she has learned, but formal examinations can test her growth in insight and in appreciation to only a limited extent. The student nurse herself is her own best judge of her growing *insight*, of her ability to *discover relationships* and of her growing *appreciation* of her profession and of her fellow man.

SUMMARY

Learning is self-active. Suggestions as to how study procedures may be improved are of little value, unless the student is convinced of the significance of self-initiated activities.

One of the most pressing problems to which the student nurse should give attention appears to be the organization of a time schedule for unassigned hours. This seems to be a personal matter, in most instances, even though the hospital school may have certain required study periods.

Most student nurses can speed their reading rate. Studies indicate that slow reading is often a serious handicap to learning. Studies also suggest that students can help themselves by practicing increased speed in reading.

Many students have difficulty in taking notes on lectures and readings. One of the poorest methods of taking lecture notes, according to studies, is to take down everything that is said. Students who have worked out a plan of note taking tend to be more successful in their scholastic work than those who have no plan.

Intelligent learning is goal-directed.—Students often ask whether it is possible to “learn to concentrate”. Studies suggest that a strong purpose is related to ability to concentrate. It is necessary to concentrate *upon something*; work toward a goal makes attention to the task at hand relatively easy.

Knowledge of progress makes for efficiency in studying. This fact has been demonstrated experimentally. Unless a student nurse defines her goals in relation to various aspects of her study program, she cannot measure her progress.

The habit of looking for *means-end* relationships is an aid to efficient study. Without defining a goal the student cannot see any connection between methods of study and the results of her activities.

Intelligent learning involves a search for meanings.—It is desirable to avoid a tendency common to many students,—concentration upon fragments of an assignment. The habit of looking for meanings which run through an entire assignment or lecture has been found helpful.

Notes can be organized according to individual preference, but any scheme which does not stress the student's reaction to the material read or heard seems to be relatively poor. Readings and lectures can be *personalized*, by writing down questions, looking for an outline that has not been stated, and by reorganizing later according to an original outline.

The value of looking for principles has been experimentally tested. Principles are remembered better than factual content because they are often more meaningful.

The same principles which seem to apply to efficient study, in general, appear to be equally applicable to specific aspects of the nurse's study program: intelligent learning is self-active, it is goal-directed, and it involves a search for meanings.

In applying the principles to the learning of motor skills, the necessity for self-activity is obvious. A model is helpful only in connection with each student's trials. Practice makes perfect only when we practice correctly. An intentional practice of an automatic error may, occasionally, be advantageous.

The importance of defining goals in motor learnings is also more or less self-evident. Progress can be measured only in terms of recognized standards.

In learning motor skills it usually seems to be desirable to learn the act as a whole, returning later to difficult parts which may be practiced separately.

Motor learning often proceeds at a rapid rate at first and then seems to remain on a dead level. Plateaus, or periods of no progress, are related to the student's attitudes and to the persistence of faulty methods.

In studies necessitating a large amount of memorization, the plan which a student outlines for herself is very important. Experiments suggest that it is beneficial to read materials more than once, that some form of recitation is an aid to recall, and that overlearning is necessary. In general, in learning content that is to be memorized, it appears to be advantageous to distribute study time, rather than to concentrate for a long time at any one period.

The significance of defining a goal in relation to memorization is much the same as in other aspects of learning. A sense of success due to a definition of standards of accomplishment seems to be helpful.

What we do after studying content which is to be memorized is important. In planning her study program, the student nurse would do well to separate, in her schedule of preparations, those subjects in which memorization is stressed.

In memorizing lists of technical terms or formulae, it seems to be advisable to organize the material into related parts.

There is no aspect of the nursing education curriculum in which the attainment of motor skill is the only goal, and there is none in which memorization is an end in itself. There is no group of courses in which understanding is not an important goal. There are, however, certain courses which aim primarily to contribute to the student's growth in understanding and appreciation.

In studying the content of courses such as history of nursing or psychology, the student nurse should keep the purpose of the course constantly in mind. She should be ever on the alert to interpret. She will find it advantageous to check her own growth in insight, in her ability to discover relationships, and in appreciation of her professional opportunities.

SUGGESTED ACTIVITIES

1. **Experimental study of overlearning.** Test your recall of earlier learnings by completing each of the following as rapidly as possible. Some you will remember better than others. Can you discover why? Discuss.

Pride goeth before a _____

One two _____

Thirty days hath _____

Alpha, Beta, Delta _____

To him who in the _____

Hail to thee _____

c d e f g _ _ _

Roses are _____

From his head to his _____

Une, deux, trois, _____

Q. E. _____

The square of the _____

I pledge allegiance _____

We the people of _____

2. **Discussion.**

(1) Compare notes on plateaus that you are experiencing in connection with some immediate aspect of your learning. Consider possible causes and what you might do to improve.

(2) What subjects in your program should be separated in planning a study schedule? Suggest desirable sequences.

(3) The following incident illustrates a violation of one of the study principles suggested in this chapter. What principle do you believe to have been violated by the student?

A *nursing arts* instructor gave the class a test on a list of terms. A few days later, she repeated the test, without warning. A student complained because the instructor had not gone over the terms again before repeating the test.

3. **Experimental study of reading speed.** A partner is needed for this study. Select a page in a book which you are opening for the first time. Ask your partner to time you as you read the whole page. Then, hand her the book while you tell her what you have read. If she is satisfied that you have grasped the meaning of what you have read, divide the time needed to read the page by the number of lines and the number of words to the page. This will give you a *very rough* estimate of your reading speed. If you re-

peat the experiment with different pages you can obtain a better idea of what your speed may be. Compare speed with other members of your class and with students mentioned on page 126 of this text.

4. Notebook suggestions.

(1) Read an assignment at your own normal rate of speed and record the amount of time needed. Estimate the time spent per page. The next time that you use the same book try to read at a faster rate. Keep a record of your progress.

(2) Make a study of different plans of spacing study periods devoted to the memorization of a list of terms. Set aside a certain amount of time which you plan to devote to the study of the terms during a nine day period. During the first three days, use one-ninth of the total time each day, studying one period, per day. During the second three day period, study only once, devoting one-third of the nine day amount of time to the study of the list. During the last three days, study twice each day, apportioning the remaining one-third of your time. Make a record each study period of the number of words which you think that you have learned. Which method do you prefer and why?

(3) Read study suggestions from several references such as Bennett, Flemming and Aldrich and Muse (see list below). Organize an outline into which you can fit suggestions from several sources.

SUGGESTED READING

Bennett, M. E. *College and Life*, New York: McGraw-Hill Book Co., 1941.

For suggestions of how to improve study procedures, read Chapters VII through XIV.

Flemming, C. W. and Aldrich, G. L. "The Development of Study Skills and Work Habits in the Horace Mann School," *Teach. Coll. Rec.*, 1943, 44, 433-448.

A list of study skills and habits prepared by a special committee is presented.

Ham, A. W. and Salter, M. D. *Doctor in the Making*, New York: J. B. Lippincott Co., 1943.

For a discussion of study habits illustrated by significant drawings, read the short Chapters 2 through 7.

Muse, Maude B. *Efficient Study Habits*, Philadelphia: W. B. Saunders Company, 1929.

This is a small volume filled with suggestions for improving study habits.

Wrenn, C. Gilbert. *Practical Study Aids*: Standard University Press, 1942.

This is a manual for students in pamphlet form. Suggestions are concrete and practical.

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- ⁹ HAVERKAMP, H. J. "Implementing Recall," *Proc. Ia. Acad. Sci.*, 1941, 48, 353-355.
- ¹⁰ FORLANDO, G. *Learning with Various Methods of Practice and Reward*, New York: Teachers College Bureau of Publications, 1936.
- ¹¹ SEAGOE, M. V. "Additional Laboratory Experiments with Qualitative Wholes," *J. Exp. Psychol.*, 1937, 20, 155-168.

Chapter VIII

LEARNING TO THINK AND TO REASON

“Think first”, “Let your head save your heels”: these are time-honored admonitions which are familiar to many student nurses. Most intelligent adults can recall similar words of caution which have been directed to them in childhood. The desirability of thinking is not questioned by any normal person. Man’s superiority over lower animals is due to his greater ability to overcome the limitations of space and time in his everyday living. A man, sitting in comfort in his own house, can travel to the farthest corners of the earth, as he reads, talks or listens to the radio; he is not limited by space. A little girl, very much like the little girls whom many student nurses recall, caring for a doll or a puppy, can dramatize herself as a grown-up nurse. She, for the moment, is not limited by the years which separate the child and the adult.

Almost anyone who is capable of thinking is more or less appreciative of his ability to *let his head save his heels*. Most children who are admonished to *think* would gladly accommodate if they only knew how to do so. Most adults, as well, would like to think better than they do. The student nurse is, of course, no exception. Her work is such that *thoughtfulness* and *reasonableness* must be valued highly.

CHILDISH THINKING ILLUSTRATES IMPORTANCE OF EXPERIENCE

Before undertaking a discussion of how thinking may be improved in adult life, an informal survey of childish thought may throw adult problems into bold relief. Thinking always involves a reaction to present stimuli, in terms of something that has been seen or heard or otherwise sensed at some previous time; thought processes of a very young child are, therefore, less complex than those of an adult, who is trying to solve a problem. It is possible, however, to discover, in the reactions of even a baby, the basis of more complex reactions which characterize adult thinking.

Meanings in Terms of Experience.—Through observations of the thinking reactions of young children, it is possible to appreciate what is

meant by the statement: *thinking always necessitates the use of past experiences*. The uncritical responses of small children often illustrate the way in which all persons, older as well as younger, react to new situations in terms of something known in the past. A baby, for example, early in the development of language, might call a radiator a "hot" or his bonnet a "bye bye", because he had learned the *meanings* of radiator and bonnet through first hand experience.

Two little girls, less than four years of age, were heard arguing about the hymn, "Bringing in the Sheaves". One child, having had no experience whatsoever with sheaves, insisted that the song should be sung "bringing in the sheets", because she did know that sheets were brought in from the wash line. The other child, less practical in her interpretation, insisted that the song should be sung "bringing in the cheese".

A kindergarten child, in telling the story of *Cinderella*, has contributed a classic illustration of how new experiences can be interpreted only in terms of past experiences, however limited they may be.*

Once there was a little girl named Gingerale. And when she was around five years old her dear grandmother died and went up to heaven. And a stepmother came with a lot of ugly children. And they were jealous of Gingerale because she was the prettiest. And they made her go all ragged and dirty and do all the dirty work—and clean up the back yard. And they dressed up in all the pretty clothes and went to the ball game. And the dear grandmother came down from heaven and took her stick and touched two mouses and turned them into three horses—and she took her stick and touched the mouse trap and turned it into a buggy wagon—and she touched her clothes and made 'em all pretty—and Gingerale went to the ball game. And she played ball and played ball. And the dear grandmother said she must come home when the clock struck twelve or she would be like she was. And she didn't hear the clock strike twelve. And the dear grandmother took her stick and touched the three horses and turned them back into two mouses—and she took her stick and touched the buggy wagon and turned it into the mouse trap. And she lost her glass slipper. And that was the last of Gingerale.

Cinderella, of course, was a term entirely unknown to Buddy, but *gingerale* was within his experience. He knew nothing of godmothers, but he did know something about grandmothers. He knew nothing about the disagreeable task of sweeping up cinders, but he had had at least one distasteful experience in cleaning up the back yard. *Ball* to him could mean only

* Courtesy of Julia Wade Abbott.

one thing—ball game. At a ball game the thing to do is to play ball, so naturally, Cinderella must have played ball.

Further illustrations of how we get meanings in terms of experience were furnished by some children in the kindergarten and first grade, when they were asked to make drawings illustrating the following poem:*

When blue sky smiles and birds come back
And little flowers are springing
I feel inside all shiny warm
Like dancing and like singing.

Drawings which are reproduced in Figures 27 to 30 suggest what the poem means to different children. Figure 27 shows what one child thinks about a *sky smiling*. All drawings picture the return of the birds, but Figure 28 gives especial emphasis to the reference to birds. The little flowers appear to be *springing* in Figure 29, very much as a child might jump up from the ground. The most interesting contribution of the child who drew Figure 29, however, is his interpretation of what it means to feel *warm inside*. Other children drew pictures of children in bed or sitting by a stove. In many drawings a house with smoke pouring out of the chimney was portrayed. In Figure 30, the spirit of the poem is, perhaps, best interpreted.

Figure 31 is included because it suggests a common childish tendency to humanize animals or inanimate objects. It is an original story-drawing made by a kindergarten child. The smug expression of the human face of the chicken is, perhaps, accidental but it was evidently the child's intention to depict satisfaction in achievement. The story, as dictated by the child, is: A chicken,—he says, "Look—I laid an egg."

Recognition Of Likeness And Difference.—Basic in interpreting present experiences in terms of the past, is the ability to recognize similarities and differences. Although a very young child's thought processes are necessarily less complex than those of an older person, we can learn something about the nature of adult thinking by observing the early development of ability to recognize resemblances. A young baby responds favorably to anyone who feeds him and makes him warm and comfortable. His responses to different persons are undifferentiated; he apparently does not distinguish one from another. As he grows older, however, he appears to notice differences between familiar adults and strangers. At one stage he may respond favorably to adults whom he recognizes and less favorably to others. We can detect in his behavior a recognition of similarities and differences as he identifies

* From a poem by Oliver Beaupré Miller in *Come Play With Me*, P. F. Volland Company, reproduced by permission of the author and the Wise Book Company, New York.



FIG. 27.—WHEN BLUE SKY SMILES.

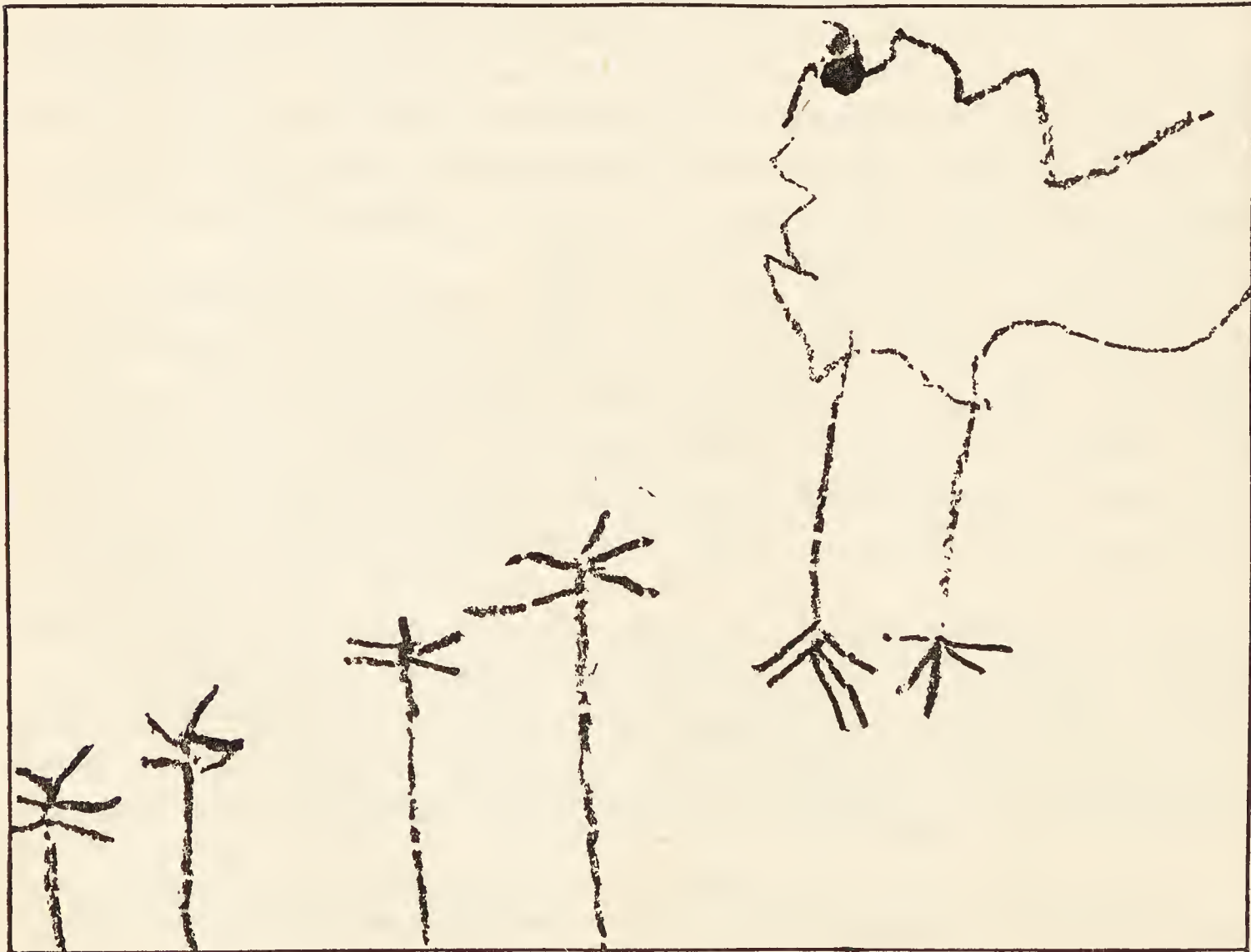


FIG. 28.—AND BIRDS COME BACK.



FIG. 29.—I FEEL INSIDE ALL SHINY WARM.



FIG. 30.—LIKE DANCING AND LIKE SINGING.

pictures of dogs, shoes, babies, balls and so on. In other words, he discriminates; he recognizes differences between dogs, babies, balls and shoes. He may call all four-legged animals *dogs* and pictures of all men may be *daddy*, because resemblances are apparently more marked than differences.

The ability to make increasingly fine discriminations is often measured in tests of intelligence. Children are asked to distinguish between longer

and shorter lines, for example, or between heavier and lighter weights. A recognition of esthetic differences is one evidence of growth in thinking ability. A page from an intelligence test for children (Fig. 32) suggests several levels of discriminative ability. A preschool child can often select the one pretty face, in contrast with the two ugly faces. It takes a finer development of discriminative ability to distinguish the prettiest line or the prettiest dancer.

Confusion of Real and Fancied Experiences.—In reacting to present situations in terms of the past, young children sometimes seem to confuse real happenings with fancied. They, normally, try out all sorts of experiences through dramatic play. A four-year-old child is able at will to

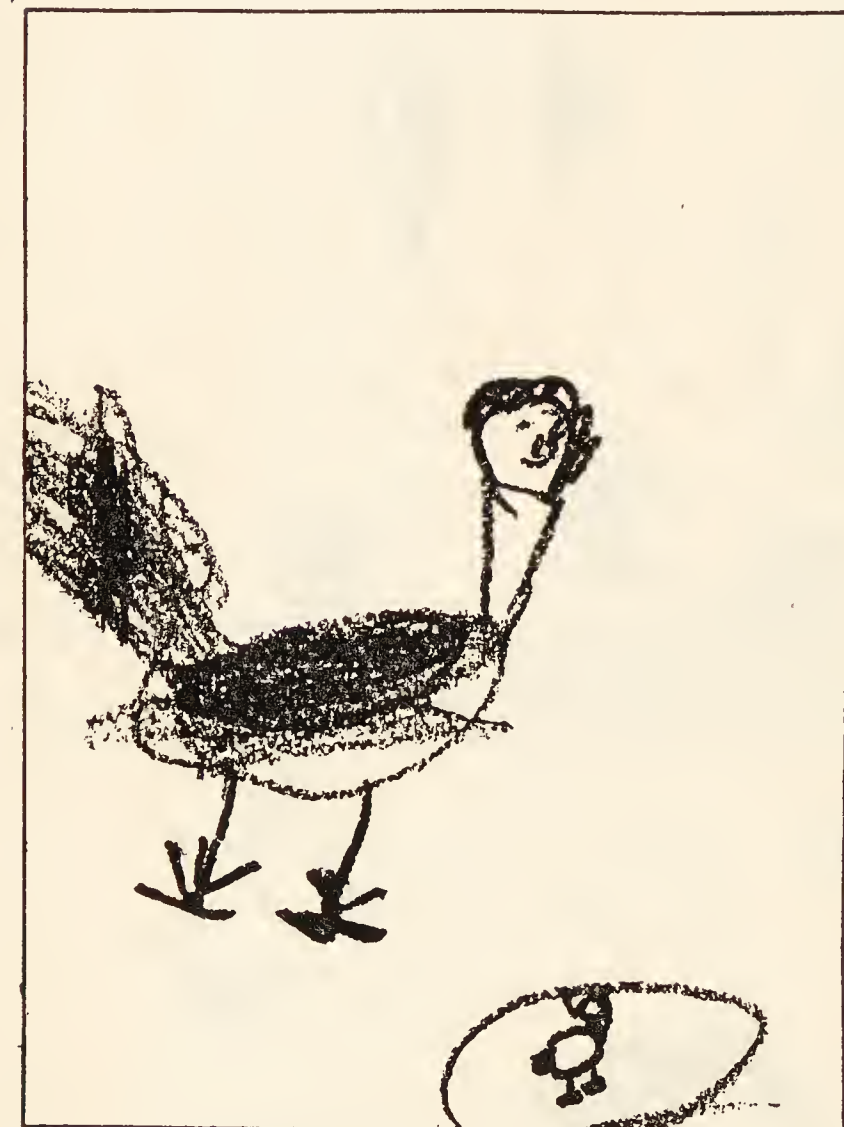


FIG. 31.—A CHILD'S DRAWING OF A CHICKEN.

Note the face of the chicken, showing the childish tendency to humanize animals.

become a giant, a horse or even a steam engine. His dramatic experiences are wide. In recalling the past it is probable that he cannot always distinguish the likely from the unlikely, because to him, the great dramatist, all things are possible. Children appear, at times, to be uncertain as to just what has happened, to whom it has happened and when. Just how clearly young children can distinguish truths from untruths we do not know. Many of the fanciful tales which they tell as real experiences lead us to believe that fact and fancy are not always clearly distinguished. Childish fabrica-

tions often seem to have a fact basis, because they are so often told in the first person, and as actual experiences. One child of preschool age very seriously told of a horse that he had seen climbing a ladder. A little girl of the same age told of a squirrel that had rung her doorbell. In the conversation of children of preschool age we hear of pet elephants that are kept in wood sheds and of incredible happenings that are told as actual experiences.



FIG. 32.—ESTHETIC DIFFERENCES.

(From *Pintner-Cunningham Primary Mental Test*, for kindergarten and first and second grades. Copyright, 1923, by World Book Company, Yonkers, New York. Reproduced by written permission.)

Confusion as to the person who has had the experience is suggested in the following stories told by a kindergarten child.

"I went to Walbridge Park and took a jump and landed on an elephant's back. He started to run. Who's afraid of an elephant? The elephant took a jump and came to a tree. I jumped onto the tree. I hanged onto a thin limb and turned a somersault. The stick began to break and I landed on the elephant's back. Another man did that. It was Jack Dempsey. No, it was my brother.

The same boy later remarked: "Once when the fish was going, I was out on the ground, and the ground was wet, and I dug fish worms. I got a bamboo stick and put fish worms on it. My brother did that."

The shifting of the main characters in the recall indicates a lack of implicit belief in his stories. The stories of this boy are excellent examples of

confusion of identity. They seem to be on the border line between statements of false memories as truths, and invention for the sake of effect.

Problem Solution in Terms of Experience.—When we are confronted by a problem situation, at any level, we attempt to solve it by trying out solutions that are suggested by our past experiences. In the reactions of children, we can often notice the significance of remembered experiences in the solution of immediate problems. Here, for example, is a five-year-old who is trying to make a wagon. He may have nothing at hand except a cigar box, some small wooden squares, each of which has a hole in the center, a hammer and some nails. The hole in the center of the small block might suggest to the child that he could use the pieces for wheels. If questioned, he would be likely to tell you that wheels must go around and that square pieces would not turn if the wagon were pulled. If he had had no experience with turning wheels and stationary squares, however, he could not solve his wheel problem, no matter how earnestly he might be admonished to *think*, because he would not have the experience upon which to base his thinking. In the light of what he has already learned about wheels and squares and wagons he will probably try out wooden spools or round tin box lids, proving to his own satisfaction that metal lids make good wheels.

Solving Abstract Problems.—When they are confronted by abstract problems, such as are presented in mental tests, we can see that children work with ideas in much the same way that they work with concrete things such as spools, box lids and so forth. In one test situation, children are told about a man who said that he knew a road from his house to the city which was down hill all the way to the city and down hill all the way back home. After hearing the statement the child is asked to tell what is foolish about it. A child who has never climbed or ridden up a hill or coasted down one has no means of solving a problem such as this, but one who has had first hand experience with hills can recall that every time that he has walked or coasted down a hill he has been obliged to walk up the hill, on his return.

Insight.—Experiments designed to test the reasoning reactions of children have sought to test what the Gestalt psychologists call *insight* or seeing into a problem. In one situation, a toy was suspended from a chandelier and preschool children were invited to get it.¹ Most children reached for the toy, and finding it beyond reach, jumped or ran and jumped in their attempts to grasp it. After having tried in various ways to obtain the toy, children sometimes *sized up the situation*, which included a box. They usually recognized the box as something that had been used before in climbing. A child who had had experience with boxes could think of this box in connection with his immediate problem, and so would go over, get the box, put it under-

neath the toy, climb on it and reach the toy. In such a performance the child gives evidence of having examined the whole situation and of having seen the *box in relation to the toy* which was out of reach.

A similar use of insight in solving a problem is to be noted in the reaction of small children to difficulties such as they encounter in everyday life. A toddler, reaching for a door knob, and finding it too high, will sometimes look around for something on which to stand. A kindergarten child, building with blocks, often gives evidence of insight into a situation when he substitutes a small block for a large one which throws his tower out of balance. Insight is apparently dependent upon three factors: *first*, past experience in a situation which is somewhat similar, *second*, a recognition of the fact that the two situations have something in common, and *third*, a sizing up of the problem situation as a whole.

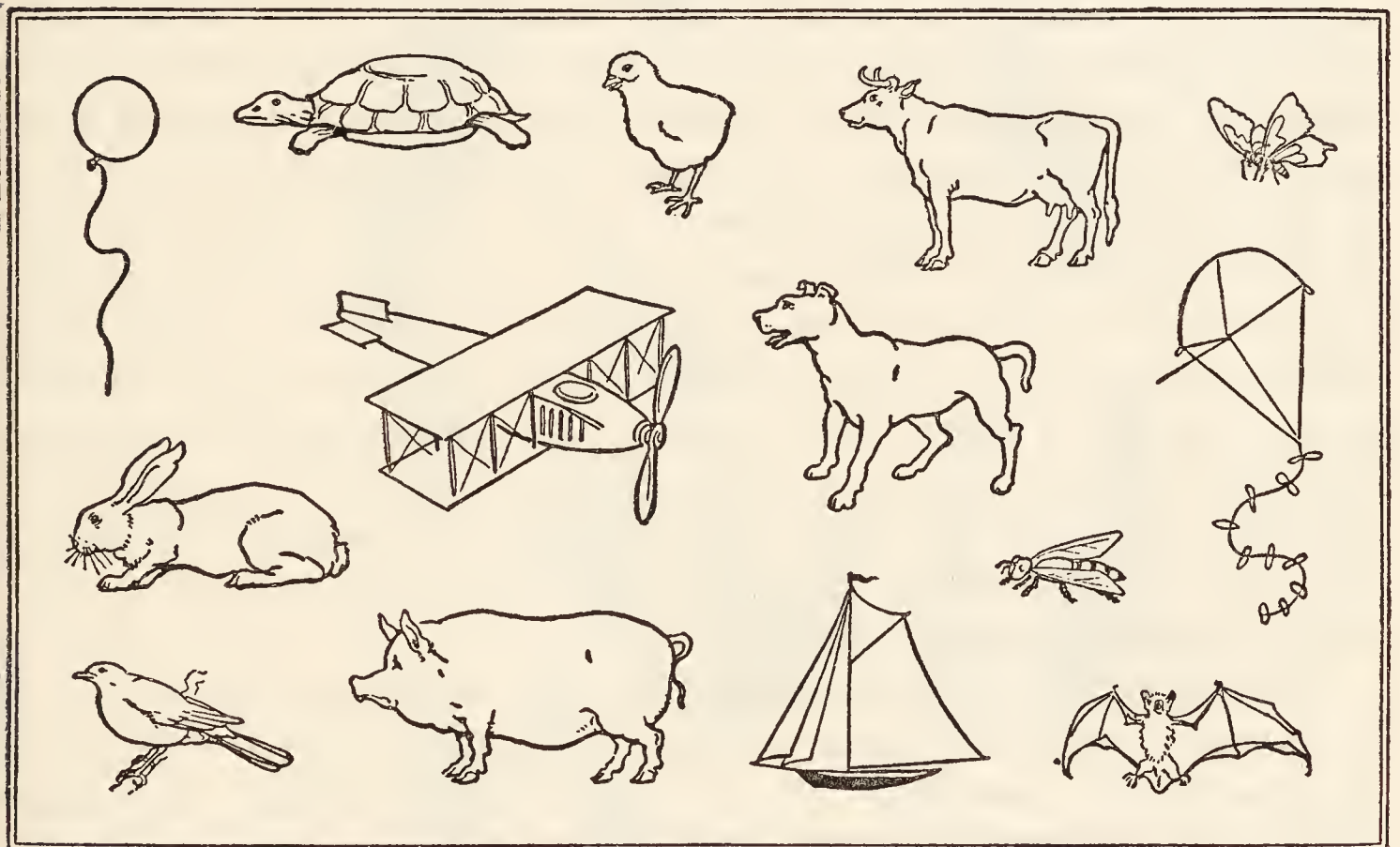


FIG. 33.—GENERALIZATION.

(From *Pintner-Cunningham Primary Mental Test*, for kindergarten and first and second grades. Copyright, 1923, by World Book Company, Yonkers, New York. Reproduced by written permission.)

Generalizing.—In the light of his experiences, a child gradually learns to generalize, or to trace in many situations certain characteristics which are common to all. With broadened experiences, he learns to *classify* his knowledge and his *concepts* are broadened. A baby, because of his limited

experiences, has a very narrow concept of persons, pets and possessions such as he learns to know in his family. *Dog*, for example, may, at first, mean only the household pet; later, as the child hears the term applied to various other dogs, he learns to recognize dogs in *general*. He generalizes about dogs.

The nature of generalizing reactions is illustrated in an excerpt from a mental test for children. (See Figure 33.) Children are asked to mark all the things which go up into the air. In order to respond intelligently, the child must examine each picture on the page, critically, as he includes it in his classification or discards it as one which does not belong.

CHARACTERISTICS OF THOUGHT

Typically childish reactions serve as a good background against which to portray, in more formal detail, some of the characteristics of adult thinking. For purposes of analysis only, it is helpful to break down the complex intellectual reactions involved in *thinking*. Older psychologies devoted many pages to *perception*, *attention*, *memory* and *reasoning*. In a psychology adapted to the practical needs of the student, a detailed consideration of elements in the thought process would be out of place. As a matter of fact, thinking responses are not isolated from other aspects of behavior; thinking and feeling and doing are overlapping reactions. Any analysis of the characteristics of *thought* is bound to be arbitrary. We cannot conceive of a person indulging in reactions, often designated as *perception*, or recognition of meanings, without being attentive or without remembering past experiences. We cannot *reason* without being attentive, recognizing meanings and reacting in the light of past experiences.

Perception.—In an earlier chapter we discussed various receptor organs by means of which we respond to physical stimuli. A receptor when stimulated results in a sensation. We practically never experience a sensation which is totally devoid of meaning. As soon as a sensation takes on meaning, or is interpreted, our perception of the stimuli develops. We perceive something which has meaning, something which we can interpret in the light of past experience.

Insight.—The way in which previous experiences make new situations meaningful can be tested informally by glancing at Figure 34. Almost anyone who has ever watched a dog will identify the picture at once. Even though many parts are missing, the parts that are there serve to suggest a complete picture. To a person who had never seen a dog, the figure might be meaningless.



FIG. 34.—ILLUSTRATING “INSIGHT” OR “REORGANIZATION” IN THE PERCEPTUAL FIELD.

The separate elements in the figure have to be integrated. “Insight” is shown in grasping the pattern, putting the parts together to make a meaningful whole. (From R. F. Street, *A Gestalt Completion Test*, Bureau of Publications, Teachers College, Columbia University. By courtesy of the publishers and the author.)

For an illustration of more gradual insight into meanings the nonsense blots shown in Figure 35 may be studied. At first glance, some of the blots appear to be meaningless. As we continue to look at any one of them, some small part will perhaps stand out, calling to mind some familiar object. Continuing our close scrutiny of the picture, we discover that we not only see certain parts that have meaning, but we discover that we have woven the parts together, so that we see each blot as an integrated whole.

For Figure 35, see pages 140-141.

Errors in Perception.—Errors in the interpretation of sensory impulses are common among those who are ill. A sick person, like a child, is often uncritical in his interpretations of what he sees or hears or senses in some other way. A patient sometimes complains of faces that he sees in the flowers. A curtain blowing, slightly, may be interpreted as a moving person in the room or it may, in very uncritical states, appear to be something supernatural. Commonplace sounds such as the creaking of a door or a call on the loud speaker may take on bizarre meanings. *Misinterpretations* of sensory stimuli which are commonly known as *illusions* are apparently dependent upon many factors which influence the human organism.

Illusions (false perceptions), are not uncommon in everyday, normal life. In Figure 36, three well-known

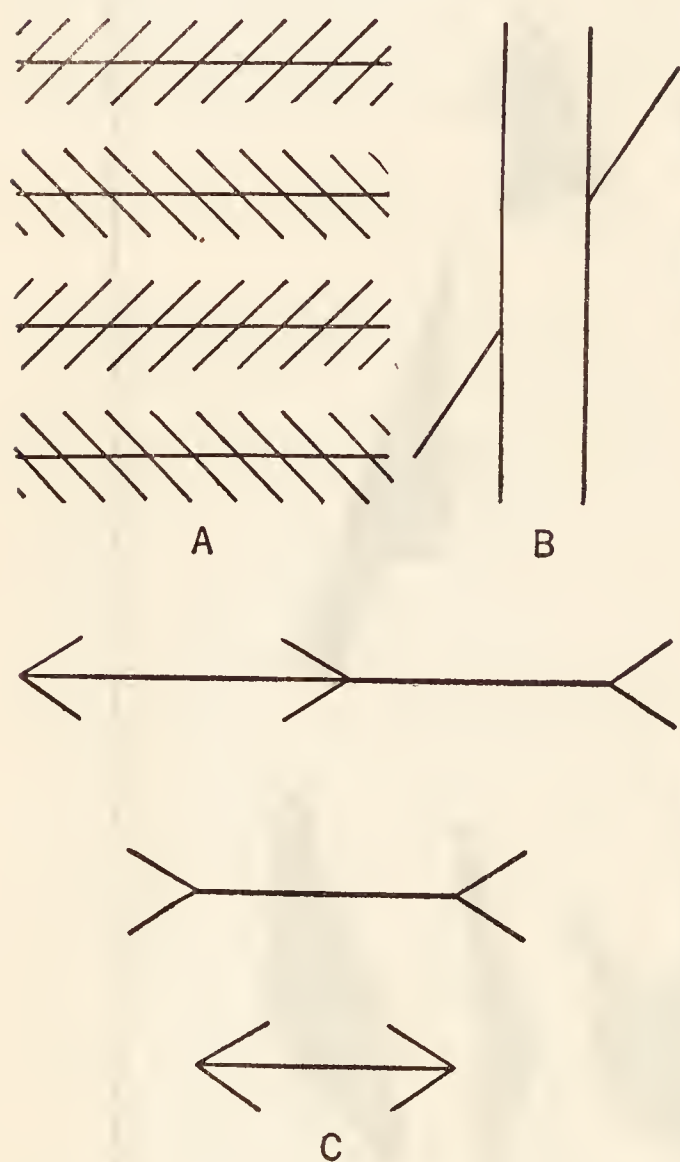


FIG. 36.—ILLUSIONS.

illusions are pictured. In one, the Müller-Lyer illusion, it is evident that the angles at the ends of the line give an illusion of greater or lesser length than the true lengths. On the Poggendorf figure, the diagonal line appears to be two lines. The Zöllner figure gives us the impression that the horizontal lines are not parallel. What we see in any situation evidently depends somewhat upon the setting in which we see it.

Attention.—Students frequently sit in classrooms while the words of a lecturer stir up sound waves that beat upon their ears. Some students, al-

though undoubtedly aware of the fact that hearing receptors are being stimulated, do not find the disturbance very meaningful. This may be due to the fact that attention is focused elsewhere. Students sometimes have a similar experience while gazing at the pages of a book which are relatively meaningless, even though they are not totally unaware of the fact that visual receptors are being stimulated. Obviously, it is difficult to make any experience meaningful unless attention is focused upon it.

What is meant by focusing attention? A hungry baby often demonstrates what is involved in being attentive. If offered a bottle, a rattle, and some other toy, he is likely to disregard the toys and reach for the bottle. As far as we can note, he behaves as if the toys were not present, even though they are within his field of vision. He is attentive to the bottle; his attention is focused upon it rather than upon other things in his environment. Apparently, in this case, an organic drive determines the direction of the baby's attention. After being fed, with the hunger drive no longer a factor influencing the direction of his attention, he will probably reach for a toy or for something other than the bottle.

In adult life attentive behavior is similarly selective. We disregard much that is going on around us. If we were responsive to every internal and environmental stimulus, the world would be a great booming confusion. As in the case of the hungry baby, organic drives often play a large part in determining the stimuli to which adults will be attentive. Learned motives are also important factors in directing attention, as they are in directing thinking in general. The nurse often finds herself in situations in which organic stimuli are temporarily ignored. She can be excessively fatigued without realizing it. While on duty she is relatively inattentive to her need for sleep or for relaxation of her tired muscles. She is, however, able to be somewhat inattentive to organic stimuli, only because she is more attentive to something else. As soon as she goes off duty, she immediately becomes highly attentive to her need for rest and sleep.

A nurse, on duty, also disregards environmental stimuli which would, if she were at leisure, attract her attention. If she were, for example, taking a pulse or watching for a change in a patient's respiration while a patient across the hall was listening to the nurse's favorite radio program, she would be relatively inattentive to the radio, because she must of necessity, be more attentive to the patient's reactions. The two illustrations suggest that attention can be turned on and off at will. As a matter of fact, much of the time, we attend without effort upon our part. Organic drives, interests, emotional attitudes and everything that enters into motivation also contribute

to attention. Attention is no more forced, in many instances than the motives which determine its direction are forced.

Disorders of Attention.—A few illustrations of disturbed attention may contribute to further understanding of what is involved in attentive behavior that is normal. One patient may be so inattentive to ordinary stimuli as to appear detached from his environment. Another may illustrate the opposite extreme; because of the ease with which his attention is diverted almost any slight stimulus is sufficient to distract him. Such a person seems to constantly change the direction of his thinking. In pathological states, his conversation is characterized by what is known as *flight of ideas*. His remarks are not coherent, but an alert listener can often trace many of the stimuli which are apparently responsible for his constant changes in attention. A senile person often seems to interrupt his train of thought by frequent digressions. This is because he is distracted by details. Because his attention is so easily diverted, he is sometimes incapable of short concise statements. Young listeners sometimes find this tendency to *circumstantiality* rather trying, but it is interesting to note that the rambling narrator, in spite of his many digressions, not infrequently finishes by saying what he set out to say.

Memory.—Since the emphasis of the chapter is upon the use of past experiences in reacting to present stimuli, the importance and nature of memory as an aspect of thinking is constantly stressed. To separate memory from the complex thought process and to discuss it as an isolated activity would doubtless prove both confusing and unprofitable. There are, however, certain errors and disorders of memory which throw light upon the way in which memory functions in thinking. There are three essential activities involved in an act of remembering: fixation, retention and recall.

Errors in Memory.—Some student nurses complain that they have no “memory for names”. As a rule, a person who does not remember names is one who does not heed names when he first hears them. This tendency is illustrated in the experience of a college teacher who was in a receiving line at a reception for a large group of summer school students. She was very much amused at a strange coincidence: Miss Wolff, Miss Fox, Mr. Lyon and Miss Bird passed down the line within a few minutes. She noticed that others in the line appeared to be oblivious of the strange combination of names. Later, in discussing the incident she discovered that the others had not heard the names in the first place.

Occasionally, because of some pathological condition, a response that has been fixed is lost. The memory loss (amnesia), of a senile person, mentioned in an earlier chapter, illustrates failure to retain a learned response because

of deterioration of neural mechanisms. Occasionally, instead of a *loss* of memory for past events, a person may have an *illusion* of memory which is not unlike the confused memory of a child who cannot separate real from fancied experiences. One patient believed that he had participated in every historical event about which he had read.

A form of forgetting which the student nurse will learn about in psychiatric nursing is *aphasia*. This is related to memory for language. The patient gets his cues mixed. He may appear to have a clear idea of what he wants to say, but he cannot speak normally. Sometimes word cues with which he has once been familiar do not call forth the response which he has learned to make to them.

Reasoning.—In breaking down a complex act of thought into perception, attention and memory, we have not lost sight of the fact that such responses do not occur independently and that each one enters into the other two. When all processes are combined and interwoven in a solution of a problem or in answering questions, the complex response is designated as *reasoning*. The recognition of a problem is an essential step in reasoning. Students are continuously confronted by problems, but they do not always see them. One difference between a student who reacts thoughtfully and one who is relatively thoughtless in his responses is that the one is alert to problem situations while the other is not. No matter how many problems may be involved in a situation which a student may meet in studying or otherwise, the problem might just as well not be there unless it is recognized as such. John Dewey, one of the greatest of educational philosophers, has outlined the steps in an act of thought.² The first step is a *felt difficulty*. The child, in the illustration given earlier in this chapter, was confronted by a recognized difficulty when he wanted wheels for his wagon. A second step in the thought process, as outlined by Dewey, is the *location and definition of the problem*. The child, in taking this second step, defined the problem in terms of his need for something round. The third step, the *suggestion of possible solutions*, led him to consider various round objects, some fragile, perhaps, and some firm. He took the fourth step when he *considered the feasibility* of cardboard circles, tin lids and other materials and discarded some, without actually putting them to the test by nailing them to his wagon. The fifth step, the *testing of his choice* would logically follow, because of his interest in making a wagon that he could use.

Substitutes for Thinking.—Not all persons enjoy the solution of problems. In other words, not everyone likes to think. A student who can enjoy a laugh at his own expense may see a parallel between his occasional reactions and those of children and lower animals. In an experiment with

apes, food was placed out of reach of the ape.³ The animal demonstrated a remarkable dependence upon his keeper. Failing in his attempts to reach the food, the ape sought the keeper, led him to the crucial spot, just under the food, and by grunting and making gestures, indicated that he wanted help. At other times, he climbed on the keeper's shoulders in order to reach the food. In situations which called for deliberation, his behavior indicated a *preference for dependence*. In student life, a common substitute for the solution of problems by thoughtful analysis is an appeal to the instructor or the uncritical acceptance of a pseudo authority.

Errors in Reasoning.—Faulty habits of attention and carelessness in perceiving the bearings of important facts upon the total situation are common causes of unclear reasoning. Habits of evading the necessity for thinking, obviously, lead to indiscriminating conclusions. In many instances, students do not get the full implications of what they may read or hear or of problematic situations calling for direct action because they do not have a clearly defined problem or question in mind. Having achieved some sort of belief or theory (hypothesis), either by their own analyses or by way of another person, further handicaps to clear thinking result when tentative solutions are not critically examined.

In pathological instances absurd beliefs are entertained without any regard for their unsoundness. Delusions of the insane are *untenable premises* which are accepted without question. The difference between the delusions of an insane person and faulty beliefs which are accepted uncritically in normal life is mainly one of degree; delusions are more absurd and more unreasonable than everyday foolish beliefs. A poorly adjusted person, in normal life, has many beliefs about himself in relation to others which he accepts uncritically. Attitudes of inferiority, for example, are not based upon an evaluation of personal assets and liabilities. Ideas of reference, a characteristic of persons who believe that others are always looking at them and talking about them, are beliefs which are accepted uncritically. Failure to test hypotheses before drawing conclusions is one of the greatest handicaps to clear thinking.

CAN WE LEARN TO THINK?

Students sometimes enter college and nurses enter hospital schools, believing that a well selected program of education will make them *think better*. As we have suggested earlier, you can surround a student with books and with opportunities to learn but you cannot *make* him study, because study is self-active. Similarly, you can provide a student with opportunities to

think, but you cannot *make* him improve the level of his thinking, because improvement in thinking cannot be other than self-motivated.

Sometimes students believe that just by studying certain subjects in the curriculum they can improve the general level of their thinking. They expect a study of mathematics, for instance, to make them reasonable, not only in their work with figures, but in all other situations in which logical thinking is desirable. If they take courses in which careful observation of certain phenomena is necessary, they expect such courses to make them generally observing in all sorts of situations. There is little experimental evidence upon which to base such beliefs. A study of mathematics can, however, make a student value logical deductions, *if* he recognizes the steps in reaching a logical conclusion and makes *immediate application* of logical procedures to other fields. Courses in the various sciences can contribute to scientific attitudes toward all sorts of problem situations, *provided* the student recognizes and values the methods of science and can see that they can be applied widely. In all learning, habits and attitudes which are necessary in one situation can be made useful in other situations *if the learner recognizes relationships*.

Conclusions Drawn From Illustrations of Children's Thinking.—In all the illustrations of childish thinking which have been mentioned, it is clear that children always make use of past experiences in *thinking through* problem situations. In her dependence upon her background of facts and experiences, in reacting thoughtfully to new problems, the student nurse is like the young child. She must think in terms of whatever materials for thinking she may have on hand. One way to improve the level of her thinking is to *gather a wealth of factual materials to think with*.

Anyone who studies the development of thinking ability cannot fail to be impressed by the young child's recognition of resemblances. If it were not for this capacity to see likenesses and differences, the child would have no means of profiting from past experiences. The child is no different from the most thoughtful adult in this respect. A student nurse who undertakes to improve the level of her thinking can, with practice, become more alert to the relatedness of the various aspects of her program. The nursing curriculum is an integrated one in which nothing that is taught is totally unrelated to the rest of the program. Textbooks, lecturers and class instructors cannot always point out relationships (or contrasts), to the student. A second means of improving thinking, suggested by studies of children's thinking, is to *form the habit of looking for relationships*.

The child, at an early age, develops the ability to generalize. He learns, so gradually, to classify and organize his experiences that his capacities along

this line are often not appreciated. In adult years this ability to fit experiences into a pattern is also not fully appreciated. The student nurse is often overwhelmed by factual content which she must learn. Facts become more meaningful and are more provocative of thought when they are classified and stated as general conclusions. A good thinker is a person who makes a habit of generalizing. In learning to think more effectively it is undoubtedly helpful to *practice generalizing from facts*.

The difficulty which young children seem to have in distinguishing the real from the fancied is suggestive of a further possibility of improving thinking on an adult level. Children cannot be as critical as adults in their judgments, but the ability to make discriminating judgments appears to increase as children grow older. A fact-finding attitude is a characteristic of an adult thinker. As such an attitude develops, thinking is improved. A further step in learning to think better is, apparently, to habitually *distinguish between fact and opinion*.

The next suggestion is an elaboration of the one just made. In her studies and in her everyday life the student nurse who is interested in improving her habits of critical thinking will demand that opinions be backed by facts. Arm chair opinions represent one extreme. These are, as the name implies, comfortable, easy-going, uncritical and unchecked personal impressions. Opinion is always some one person's interpretation of his experiences and the factual material that he has gathered. Expert opinion is based upon wide experience and a careful analysis of scientific data. In weighing contradictory opinions, we can do no better than *consider the source*.

The child who was making a wagon and found it necessary to look about him for wheels illustrates a characteristic of good thinking. He recognized his problem. He knew that he must find something round, and substantial, that either had a hole in the middle or could have it. In reacting to many problem situations in everyday life, a careless thinker may be confused because he does not get at the heart of the problem which confronts him. Good thinking demands that we *look for a central problem*.

In the experiment in which children showed insight, it was apparent that they *saw into* their problem only after they had considered the box on which they might stand, *in relation to the toy* which was out of reach. The suggestion for the student is obvious. Experiences become meaningful only when we *size up the whole situation*.

Conclusions Based Upon Characteristics of Thought.—In studying errors of perception, we saw that illusions are common in daily life, as well as in the lives of some whose adjustments are pathological. What we see in a situation depends upon the cues to which we react. A false cue leads

to a faulty interpretation of meanings. In looking at a picture, much depends upon the position from which we view it; this, of course, is obvious. In reacting to situations in which we must search for meanings, the cues to which we react depend upon many personal factors; this is not quite so obvious. In a thoughtful interpretation of any experience it is important that we *recognize that differing viewpoints result in differing interpretations*.

Studies of attention bear out the suggestion that has just been made. We see what we are *set* to see. In a stage production, for example, one person may react to the beauty of the colors worn by members of the chorus and may be oblivious to dramatic imperfections; another may be carried away by the mass movement of the group, while he is undisturbed by the poor quality of the voices. These are natural and not undesirable sets or biases. When we consider bias in relation to thinking, it is apparent that emotional prejudices and intellectual bias interfere with clarity in reasoning. Many persons roll along in a rut, as far as their habits of thought are concerned. To get out of such a rut it is necessary to *avoid prejudices and look for new meanings*.

Memory, as we have seen, enters into all thoughtful reactions. Whatever we can do to improve "memory" will raise the level of thinking. One way to do this is to *be attentive to important details*.

Other suggestions for bettering thinking come from our study of reasoning. The desirability of recognizing problems has already been indicated. Student nurses, like other students, are often inclined to use substitutes for thinking. We cannot even begin to be thoughtful in our reactions until we make a direct, personal attack upon problems. A good beginning is to *meet problems directly, instead of evading them or shifting responsibility to another person*.

In the light of what is known about reasoning and problem solution, good thinking demands that, after a central problem has been recognized, we should try, not one solution, but many. Three suggestions for raising the level of thinking seem to follow: *avoid hasty generalizations; form judgments slowly; be tolerant of solutions proposed by others*.

The final step in an act of thought is the testing of conclusions. High order thinking demands that: we *regard conclusions as tentative until they have been checked*; that we *keep an open mind*; and that we *question ourselves as well as others*.

SUMMARY

For an appreciation of some of the characteristics of adult thinking, we have sought for illustrative material in the thinking reactions of children.

Past experience appears to be of the utmost significance in children's adjustments to situations involving a search for meanings or solutions to problem situations.

Experiences would be devoid of meaning if children could not see in any new situation, suggestions of something which they have experienced in the past.

Children, because of limited backgrounds cannot always distinguish between the likely and the unlikely; this handicap is sometimes evident in their uncritical thinking reactions.

In solving problem situations, either concrete or abstract, problems are grasped and solutions discovered in the light of past experience. Insight is dependent upon ability to see into relationships, which, in turn, is dependent upon previous learnings.

A separation of the complex reaction of thinking into *perception*, *attention*, *memory* and *reasoning* is arbitrary and for purposes of discussion only; they do not function separately.

It is possible to see and to hear without attaching a correct meaning to what we are seeing or hearing. Errors in perception suggest that some faulty thinking is due to misinterpretation of stimuli.

Organic drives, interests, emotional attitudes and everything that enters into motivation combine to make us attentive to some stimuli and relatively unresponsive to others.

"Poor memory" is often due to failure to respond thoughtfully in the first place. Much material that is said to be forgotten has never been learned in the first place.

The steps in an act of thought have been analyzed as: a *felt difficulty*, the *location* and *definition of a problem*, the *suggestion of a possible solution*, a *consideration of the feasibility of suggested solutions* and the *testing of choices made*.

Faulty habits of attention and carelessness in perceiving the bearings of important facts upon the total situation are common causes of unclear reasoning.

In all learning, habits and attitudes which are essential to one situation can be applied in other situations only *if the learner recognizes* how the two situations are related.

In the light of studies of children's thinking and an analysis of the char-

acteristics of the thought process certain recommendations for the student seem to be indicated.

Gather a wealth of factual materials to think with.

Form the habit of looking for relationships.

Practice generalizing from facts.

Distinguish between fact and opinion.

Consider the source.

Look for a central problem.

Size up the whole situation.

Recognize that differing viewpoints result in differing interpretations.

Avoid prejudices and look for new meanings.

Be attentive to important details.

Meet problems directly instead of evading them or shifting responsibility to another person.

Avoid hasty generalizations; form judgments slowly; be tolerant of solutions proposed by others.

Regard conclusions as tentative until they have been checked; keep an open mind; question yourself as well as others.

SUGGESTIONS FOR DISCUSSION

1. Discussion problems.

(1) Do you reason about cures of disease better than ancient man? Explain why your conclusions are not the same as his.

(2) A patient comes into the hospital, believing that it is a place to be avoided. You do not believe as he does. Under what conditions might his belief be as reasonable as yours?

(3) A child patient, upon entering the hospital, does not have faith in any nurse. Is he necessarily unreasonable in his lack of faith?

(4) How might you proceed to teach yourself to remember every patient's name after hearing it once?

2. **Illustrations of faulty generalization.** A three-year-old child who had been punished, after picking flowers in a neighbor's garden, went back to the garden and again picked flowers, but carefully avoided all geraniums. Can you explain why? Gather illustrations of faulty generalization on an adult level. As illustrative, consider reactions such as those of a student nurse concerning the motives of a fellow student or the generalizations of a patient concerning nurses or doctors.

3. Experiments to try.

(1) This is an experiment which illustrates how a *set* to react in a certain

way influences our thinking. A blind beggar had a brother and that brother died. What relation was the blind beggar to the brother who died? (The answer is not *brother*.)

(2) Upon what does Tillie Williams base her likes and her dislikes? To answer, you must find a pattern in Tillie's preferences. You will probably find the pattern more readily than a person who hears but does not see the problem, so you may want to try it out with other persons. *Tillie Williams* likes beets but not vegetables, cookies but not cakes, and pillows but not cushions. She likes to cook but she does not like to boil, stew, fry, broil or bake. She likes to sleep but she does not like to rest or to be in bed.

(3) Turn to page 277 and study Figure 46 for 10 seconds. Try to draw one set of blocks. Turn to the figure as many times as necessary to get a perception of it, looking at it for only 10 seconds and drawing it each time. This should help you to appreciate how perception of meanings develops.

(4) This is an experiment to show how we sometimes get our *cues* mixed. Put your right hand just below your left shoulder, with the palm against your body. Place the left hand in a similar position near your right shoulder. *Keep the wrists in contact*. Moving your hands and arms just enough to make it possible for you to do so, bring the palms of your hands together and clasp your fingers. Try to move any finger that someone may designate, by pointing to it. Try this with several fingers. Then continue to try to move specified fingers, this time, with your eyes closed. In terms of visual and kinesthetic *cues* why is one method better than the other?

4. **Notebook suggestion.** Read this chapter again and *generalize* about the various studies and illustrations that are used. See how many can be fitted into a single generalization.

5. **Preparation for a later discussion.** Evaluate the six arguments pertaining to the two questions which follow. If you think that an argument is strong, check the word *strong*. If you think that an argument is weak and unimportant check the word *weak*. Do this without considering whether the argument supports your own viewpoint. Try to evaluate each argument impartially.*

* These items are from *A Survey of Some Religious and Economic Issues* by Goodwin Watson, and are used with his permission and the permission of the Teachers College Bureau of Publications. Because the method of scoring is to be considered later, we are using an outdated form of the test. It has been superseded by "The Watson-Glazer Test of Critical Thinking," The World Book Company, Yonkers, N. Y., publishers.

Question I. Is Socialism desirable in the United States today?

- | | | | |
|----|--------|------|---|
| 1. | Strong | Weak | It would give to all the people control of the natural resources now in the hands of a few. |
| 2. | Strong | Weak | It would give over a great deal of control to men who are not refined or cultured, sometimes not respectable, and hence would be undesirable. |
| 3. | Strong | Weak | Government enterprise has not proved as efficient in many ways as has private business. |
| 4. | Strong | Weak | Socialism is desirable because it would take away money from those who have a great deal and would divide it up among the rest of the people. |
| 5. | Strong | Weak | Socialists are undesirable radicals and extremists. |
| 6. | Strong | Weak | The old parties have become so corrupt that the country should turn to Socialism. |

Question XI. Is "profit sharing" desirable in most of the industries of the United States to-day?

- | | | | |
|----|--------|------|--|
| 1. | Strong | Weak | It is, for in many industries the workers are not getting at the present time a living wage. |
| 2. | Strong | Weak | The system is unfair, requiring workmen to risk gains or losses, for which they are not responsible. |
| 3. | Strong | Weak | Profit sharing is a paternalistic scheme in which the the employer tends to "hand out" benefits to his men, rather than an arrangement of justice. |
| 4. | Strong | Weak | It is just to let workingmen share more largely in the profits of their labor. |
| 5. | Strong | Weak | It is an unfair scheme, depriving the investor of the profits he should have from wise investment of his money. |
| 6. | Strong | Weak | It is desirable because, by keeping the workers contented, it will decrease the danger of radicalism. |

SUGGESTED READING

Deland, Margaret. *If This Be I*, New York: D. Appleton-Century Company, 1936.

This is leisure reading which should add to an appreciation of how concepts are learned through experience and how faulty concepts may be due to limited experience. Margaret Deland looks back upon her childhood and recalls her confusion in relation to the meaning of *patriotism*, *justice*, *honor* and many other concepts. Read according to interest; any section illustrates how children learn to think.

Dewey, John. *How We Think*, Boston: D. C. Heath and Co., 1933.

This has been mentioned in the chapter. Read for further discussion of what is involved in problem solution.

Dockeray, Floyd C. *Psychology*, New York: Prentice-Hall, Inc., 1942.

For a very readable discussion of thinking and aspects of thinking read Chapters X, *Attention*; XI and XII, *Perceiving*; and XV and XVI, *Thinking*.

Morgan, Clifford T. *Physiological Psychology*, New York: McGraw-Hill Book Company, Inc., 1943.

For a discussion of memory disorders and reports of studies of brain lesions, read Chapter XXV.

Morgan, John, J. B. *Psychology*, New York: Farrar and Rinehart, Inc., 1941.

For a discussion of *Perceiving* and *Problem Solving*, with many illustrations, read Chapters XV and XVI.

Murphy, Gardner. *A Briefer General Psychology*, New York: Harper and Brothers Publishers, 1935.

For a more detailed consideration of thinking reactions mentioned in this chapter, read Chapter X, *The Development of Perception*; XII, *Attention and Discrimination*; XV, *Memory*; and XVI, *Thought*. For a discussion of an aspect of thinking not mentioned in our chapter, read Chapter XVII, *Imagining, Dreaming, Inventing*.

Nagge, Joseph W. *Psychology of the Child*, New York: The Ronald Press, 1942.

Chapter IV summarizes many studies of the development of perception in childhood.

Valentine, Willard L. *Experimental Foundations of General Psychology*, New York: Farrar and Rinehart, Inc., 1941.

Experimental Studies of Reasoning are discussed in Chapter XIX.

REFERENCES CITED IN THIS CHAPTER

¹ ALPERT, Augusta. "The Solving of Problem Situations by Preschool Children," *Teach. Coll. Contr. Educ.*, New York: Bureau of Publications, Teachers College, Columbia University, 1928, No. 323.

² DEWEY, John. *How We Think*, Boston: D. C. Heath and Co., 1933.

³ VALENTINE, Willard L. *Experimental Foundations of General Psychology*, New York: Farrar and Rinehart, Inc., 1941, 389.

Chapter IX

SOCIAL AND INDIRECT LEARNINGS

The student nurse, like everyone else, is a social person. She is constantly reminded of her responsibilities and she places a high value upon self-reliance and independence. In spite of the responsibilities which she assumes she is, however, immeasurably dependent upon other persons in nearly everything that she does. In her choice of a profession she has been influenced by patriotic and social appeals, by nurses whom she has known, by friends and by members of her family. Her manner of dress, leisure preferences, political habits and opinions about all sorts of controversial topics are swayed by her associates, by what she reads, by what she sees on the screen and elsewhere and by what she hears.

The influence of other persons is not always direct and by high pressure methods. In all probability, no one of her peers (associates of her own age and ability level), has told her what to wear, how to dress her hair, what she should do with her leisure, and what she should believe about popular issues. She does not need to go far back into her past to recall her devotion to some of the fads of her high school companions. Adolescents have been accused not only of looking alike and dressing alike but of cherishing the same standards and *thinking* alike. In studying social development, we can discover certain common experiences which tend to make us more or less like our peers, in some respects. We must recognize the fact, however, that, in spite of superficial resemblances, every person is unique in the sum total of his social adjustments.

WHAT IS MEANT BY SOCIAL LEARNINGS?

The student nurse, like everyone else, is concerned with her immediate social adjustments. She wants to get along well with her fellow students. She wants to be liked. She wants to be an acceptable member of her group. She is interested in sharing in group enterprises. Immediate demands upon the student nurse are so pressing that she is sometimes inclined to believe that social learning is essentially a matter of learning to *get along*. Social adjustment is much more complex than the mere avoidance of friction and

the establishment of harmonious working relationships. It involves every reaction that a person may make in relation to his fellow man.

Habits, Standards and Attitudes.—All overt social *habits*, of course, enter into social adjustment; habits of getting along, taking responsibility and assuming leadership are just a few of the countless habits, which contribute to social adaptation. *Standards*, such as those of right and wrong, fairness, justice and honor are as much a part of any one person's social make-up as are his more readily observed ways of behaving. The habits that we acquire in relation to others and the standards or beliefs to which we subscribe combine to determine our *attitudes*, a still more subtle aspect of social development.

We can judge of a person's attitudes only by what he appears to be most ready to do in certain situations, by the opinions which he most readily expresses and by the beliefs which seem to underlie certain of his habitual reactions. Attitudes give direction to our behavior and are of tremendous significance in social adjustment. They include beliefs which are only partially admitted as well as vigorously expressed beliefs. A listing of just a few significant social attitudes may serve to explain what the term *attitude* means. Everyone has a tendency to react in a certain way to problems involving religion, for example; we are not alike in our attitudes toward Sunday observance and toward the use of ritual, to mention only two. We are unlike in our attitudes toward communism, capital punishment, censorship of the press, isolationism and war. We have differing attitudes toward certain racial, religious and nationality groups.

Attitudes Change.—If she were to think back a few years, the student nurse might find it very interesting to observe the change that has taken place in some of her attitudes toward war. After World War I, many children were taught to believe that wars are unnecessary and that the taking of human life can never be justified, under any circumstances. Shortly after the Pearl Harbor attack, many girls and boys of high school age and youths slightly older were unready for war. A study made a few months after the entrance of the United States into World War II suggests the confusion which must have been in the minds of young men and women who, almost overnight, found themselves or those who were near to them in service.¹ Seven thousand students participated in the study. Some expressed attitudes that were unfavorable to war even though we were actively in it. Their probable confusion is suggested in Table IV.

Students in the study just mentioned were not alike in their attitudes toward war. In any group, a similar variation would probably be found, no matter what question might be under discussion. We tend to have similar

TABLE IV.—ATTITUDES OF HIGH SCHOOL STUDENTS TOWARD WAR

Attitude	Per Cent Expressing
Directly antagonistic	5
Critical	6
Indifferent	21
Confused	12
Mildly favorable but critical of specific elements	9
Favorable	26
Strongly favorable	21

Adapted from Sherman, Mandel, "Attitudes of Youths of High School Age Toward the War," *Psychol. Bull.*, 1943, 40, 294-299.

TABLE V.—PERCENTAGE OF COLLEGE WOMEN SHOWING *LIBERAL*, *DOUBTFUL* AND *CONSERVATIVE* ATTITUDES IN THE FRESHMAN AND IN THE SENIOR YEAR

Section	Group	Liberal Total +	Doubtful	Conservative Total
I. The Negro	Freshmen	33.5	12.2	54.3
	Seniors	50.4	8.3	41.3
II. War	Freshmen	40.6	14.8	44.6
	Seniors	45.3	8.6	46.1
III. Economics & Labor	Freshmen	36.8	26.2	37.0
	Seniors	46.3	15.7	38.0
IV. Social Life & Convention	Freshmen	44.0	17.1	38.8
	Seniors	51.3	8.5	40.2
V. Government	Freshmen	22.1	27.5	50.4
	Seniors	33.3	17.0	49.7
VI. Religion	Freshmen	23.6	13.6	62.8
	Seniors	25.2	9.4	65.4
VII. Miscellaneous	Freshmen	40.2	14.3	45.5
	Seniors	51.6	8.0	40.4
TOTALS	Freshmen	35.0	17.6	47.4
	Seniors	44.7	10.6	44.7

Adapted from Hunter, E. C., "Changes in General Attitudes of Women Students During Four Years in College," *J. Soc. Psychol.*, 1942, 16, Table 3, page 250.

The table reads: In their freshman year 33.5% of women rated *liberal* in attitudes toward the Negro, 12.2% rated *doubtful*, and 54.3% rated *conservative*; in their senior year 50.4% rated *liberal* on these same questions, 8.3% *doubtful*, and 41.3% *conservative*.

attitudes in relation to some experiences which we have shared, but whatever enters into our lives in the way of unique experiences tends to make each of us unique in social attitudes.

Changes in attitude are to be expected in the course of four years spent in college. One investigation of attitude change extended over a seven year period.² Students were tested as freshmen, again, as seniors, and finally, three years after graduation. Attitudes studied included national and social optimism, attitudes toward labor problems, economic status, social life and conventions, and religion. Students tended to become more liberal as they continued in college and appeared to maintain their greater liberalism after they had graduated.

College women were studied in another investigation.³ In their freshman year they were given tests which measured *liberal*, *doubtful*, and *conservative* attitudes toward various questions. (See excerpts from the test on pages 291-292. When given the same test, in their senior year, a general tendency to become more liberal was indicated, but attitude change was not uniform. Attitudes toward some major problems changed relatively little, while a shift to liberalism was relatively great in relation to some other issues. Some of the results of the study are shown in Table V.

READY-MADE ATTITUDES

Every child is born into a world of ready-made values. There are certain things that he must do and other things that he must not do. His life is so ordered that he cannot do otherwise than accept many of the standards of his forebears. Family standards are handed down from generation to generation. Although, of course, not passed on in the same way that physical traits are transmitted through the germ plasma, favorite beliefs, antagonism, prejudices and tolerances are a part of our *social inheritance*. Each of us is born into a world of social values which have been established by our parents and grandparents. Our later leanings toward certain political parties, our attitudes toward social issues, such as the issue between capital and labor, our religious beliefs, and our standards of personal morality are among the ready-made attitudes which we very often accept and adopt as our own.

Children, and especially adolescent youths, also adopt, ready-made, some of the standards of their peers, with just as much enthusiasm as if the traditions of their families and the standards of their young associates did not occasionally conflict. To some young persons all who belong to the older generation are *old fogies*. In their zeal to go with the crowd, adolescents sometimes become very intolerant of the attitudes of their elders. Whether

this type of intolerance should be classified as a ready-made attitude is doubtful, but, at any rate, it is an attitude which is usually accepted uncritically.

ATTITUDES LEARNED IN THE FAMILY

It would be very difficult to single out any significant social attitude as one which has not been learned in the family. Because everyone, normally, spends most of his time, during childhood, in intimate contact with his parents and brothers and sisters, his whole outlook on life is conditioned by his experiences in the family group. Since most of our attitudes are influenced so largely by family living, it may be helpful to limit our discussion of attitudes learned in the family to just a few illustrative by-products of parent-child relationships.

Parent-Child Relationships.—The earliest social adjustment of a baby is primarily a matter of acquiescing and accepting the routine which adults plan. During his first year of life, the baby is almost one hundred per cent dependent upon adults. As long as he cannot move about freely, he is safeguarded from many situations which are later to prove highly frustrating. Just as soon as he learns to walk, his life becomes much more complex. He is surrounded by bright and interesting objects which invite him to handle and manipulate them and explore their possibilities. When he is outdoors he is lured to adventure into the busy street. The roar of traffic does not deter him. His zest for living is great, his eagerness to explore is unlimited and his judgment is extremely bad.

With ability to get around, the child often experiences something new in the way of adult-child relationships. Adults who have previously been so kindly in their attitudes toward him seem bent upon restricting him. His adventures end suddenly. His explorations are rudely interrupted, just as he is about to touch some fragile object which he has struggled to reach.

Enter the Issue—Adult Made.—Negativism is very common at the age of about two years. It is probably due to the fact that the child of this age has such poor judgment and is, at the same time, so active and so much interested in what is going on in the world around him. A contributing cause of negativism at this age is the child's inability to talk freely and to explain his projects or to suggest that interference would be most unwelcome. An observation of a thoughtless parent may serve to illustrate what is often basic in the negativistic reactions of young children. A father and a child of about two years of age were seen playing in the park. Both were apparently happy and seemed to be enjoying the experience. The little boy, full of purpose,

was walking ahead of his father when, suddenly, the father picked him up in his arms, possibly because he felt that it was time to hurry along. The child stiffened and screamed. The father seemed to be somewhat bewildered at the sudden change in the emotional reaction of his offspring, but he continued to carry the screaming, protesting mite away from the park. If the child had been able to ask for a minute's delay, he might not have expressed his disapproval so violently.

There have been studies which bear out the suggestion that negativism is a protest against interference. In one experiment, it was discovered that children would often behave negativistically if interrupted.⁴ One of the surest means of evoking a negativistic response upon the part of a preschool child was for the experimenter to pick him up and hold him on her lap. In almost any family, children may learn attitudes of resistance because of incessant interference upon the part of well-meaning adults. Two-year-old children are more negativistic than children of three or older, probably, as has been said, because it is difficult for the young child with limited language to express his disapproval in any other way.

The part which parents play in influencing the later social habits, standards and attitudes of their children is inestimable. The friendly, happy, companionable relationships that are so often established between parents and their children determine, in large measure, later constructive attitudes toward authority and toward social responsibility. Were it not for the role which parents play as interpreters of the social scene, confusion would be *worse confounded* when their children leave home. In considering *issue* experiences in family relationships, it is important that the student should guard against an inclination to regard adult-child issues as anything but one very limited aspect of family living. The way in which issue situations are handled is so very significant in determining later social attitudes, however, that it seems advisable to discuss them briefly, even at the risk of appearing to over-emphasize such experiences.

In observing the adjustments of the younger adolescent to his family, the student nurse can get an interesting perspective on her own social habits, standards and attitudes. In many instances, girls and boys of high school age have some difficulty in getting along with their parents. It is not surprising that parents and their adolescent children are sometimes at issue. Parents, generally, have established many habits of taking care of their children. When the child is an infant and totally dependent upon adults, parents must assume full responsibility. The habits which they first establish in relation to their children are not easily broken when the child grows older and becomes more capable of taking care of himself.

A desirable balance between adult and child responsibility, if established easily, is, as a rule a very gradual process which begins as soon as the young child can act responsibly. The way in which such a balance is sometimes maintained is suggested in Figure 37. The adolescent whose parents have been unable to release much of the responsibility which they have learned to assume in caring for him, is inevitably involved in issues. If either the

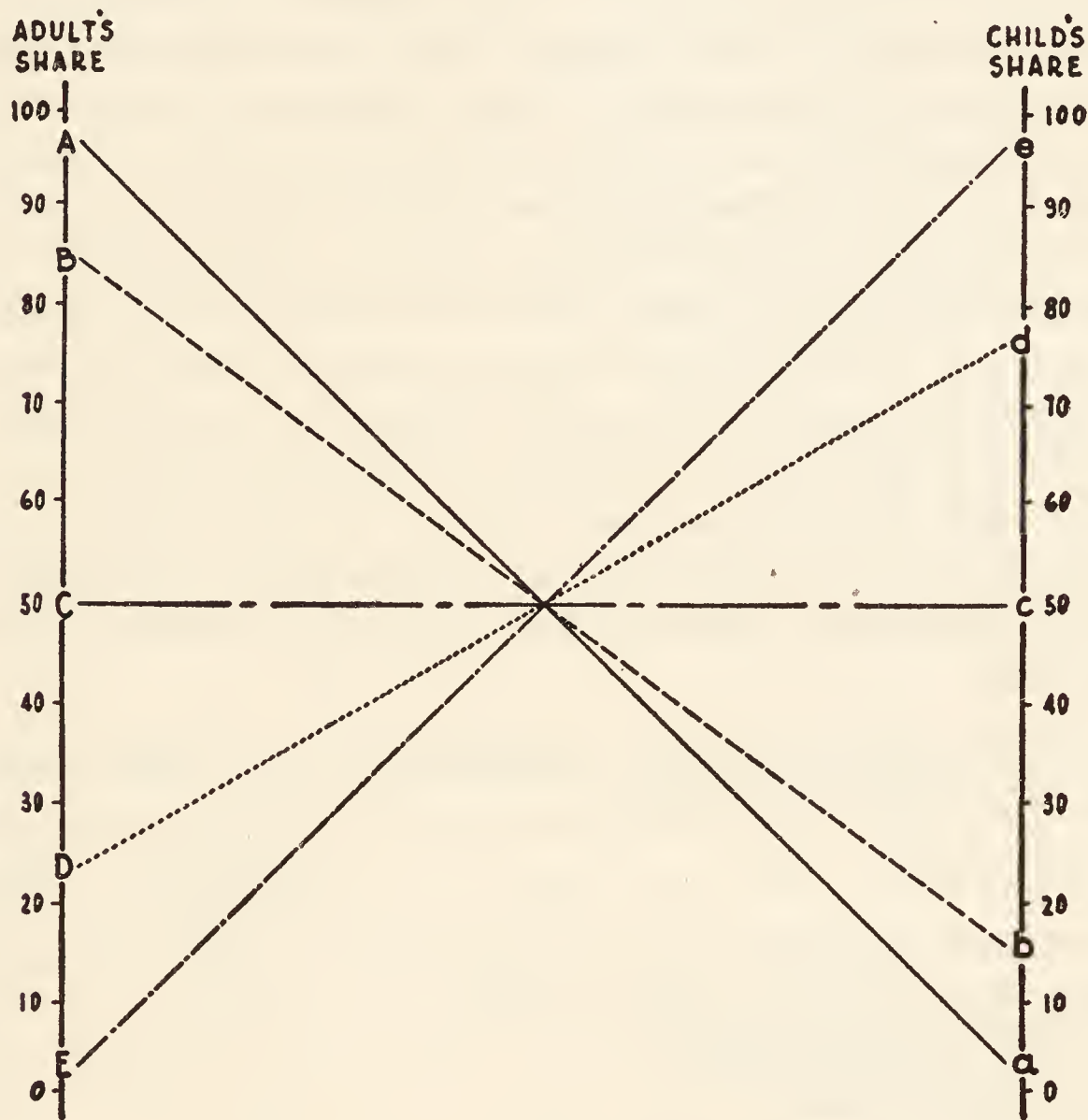


FIG. 37.—ADULT-CHILD RELATIONSHIPS.

A relationship of *A-a* implies a maximum of responsibility on the part of the adult and none upon the part of the baby, who is totally dependent. As the baby moves up in the scale to *b* and becomes that much less dependent, the adult "lets go" to that extent and moves down to *B*, so that the adult-child relationship is *B-b*. At a stage of hypothetical balance, indicating that adult and child share responsibility equally the relationship is suggested by the line *C-c*. The balance is shifted to the child's side in *D-d* and *E-e*. (From Cunningham, *Family Behavior*, W. B. Saunders Company, Philadelphia.)

young adolescent or his parents knew just when the parents could, with safety, turn complete responsibility over to the child, the problem of working together would not be so difficult. Many adolescents are like younger children, zestful, adventurous and eager to *go it alone*, but handicapped by

poor judgment. The youth who finds himself at issue with his parents often gets along well with companions of his own age; this makes him more critical of his parents than he is of his friends. It is not at all impossible that the chief reason why he gets along with his peers and not with his elders is that his friends are not interested in taking care of him, while his parents are.

Issues Between Adolescents and Their Mothers.—Various studies have been made of causes of friction between adults and adolescent youth which show the frequency and the nature of issue experiences. In one study, girls and boys of high school age were interviewed over a period of five years, in order that important issues with mothers might be recorded.⁵ A check list of issues was then made and submitted to over five hundred pupils in grades seven to twelve. Causes of issues with mothers which were checked by at least 64 per cent of either girls or boys are shown in Table VI. It is significant that girls and boys have so many problems in common. With the exception of issues about girl or boy friends and lipstick, which are, of course, specific to either girls or boys, only six of the sixteen issues which were checked by 64 per cent of one group were checked by a smaller per cent of the other. (These issues, which are specific to boys or girls alone, are marked with asterisks.)

TABLE VI.—ISSUES BETWEEN ADOLESCENTS AND THEIR MOTHERS

Causes of Conflict	Per cent Girls checking	Per cent Boys checking
Objects to automobile riding at night with boys	87	66
Scolds if school marks aren't high	82	86
Insists I eat certain desirable foods	84	82
* Insists I take sister or brother	82	51
Insists I account for money I spend	81	80
* Spends most of time away from home	78	29
Holds sister and brother up as a model	76	67
Won't let me use car	71	86
Pesters about personal manners and habits	70	69
* Insists I go with friends of her choice	70	20
* Nags about every little thing	66	26
Teases about my boy friends	66	0
* Objects to automobile riding in day with boys	66	49
Fusses about lipstick	65	0
Pesters about table manners	64	75
* Won't let me follow vocation I choose	34	65

Adapted from Block, V. L., "Conflicts of Adolescents with Their Mothers," *Abnor. and Soc. Psychol.*, 1937, 32, 193-206.

By-Products of Parent-Child Relations.—While the young child is learning, in his family, to be resistant or docile in his adjustment to adults, he is also learning many habits which cannot be readily observed. He is learning certain standards of what he believes to be right and what he believes to be wrong. While he cannot put his social standards into words, they are undoubtedly being established during the early years of a child's life. He is also acquiring beliefs about himself and about adults, and especially about himself in relation to adults. These beliefs are the basis of the attitudes which, in later life, are to influence his preferences, his self-respect, his respect for his parents, and his tendencies to be aloof or a cooperative member of his group. It is probably true that the by-products of a child's social learnings, his beliefs about the kind of person he is and about the role that he is to play, are more important to his social adjustment than his more readily observed social habits.

The by-products of parent-child relationships during early adolescence are reflected in the young person's attitudes toward himself and toward adults in general. Under happy circumstances, attitudes of respect, interest and friendship are developed. Under less favorable conditions, attitudes of distrust, disrespect and antagonism are fostered. In spite of the fact that girls and boys of high school age seem to be so reluctant, at times, to agree with their parents, their ideas of right and wrong, of justice, fair play, and social responsibilities appear to be more greatly influenced by their parents than by any other group.

In a pioneer study of moral knowledge, school children, including younger adolescents, were given the same test of moral knowledge under different conditions.⁶ They took the test when at school, at home, with companions, in Sunday school, and with their club leaders. Significantly, their moral codes were more like those of their parents than like those of any other associates.

HABITS, STANDARDS AND ATTITUDES LEARNED FROM PEERS

In the study just mentioned, the moral codes of children resembled the codes of their friends more than they resembled the codes of club leaders, teachers or Sunday school teachers. It was also discovered that children tended to shift their codes according to the group that they were with. The moral standards to which a child might subscribe when at home, for instance, were not necessarily the same as those which he believed to be right and acceptable in some other group. The student nurse, in looking back over

her past experiences in an attempt to trace the development of her own social standards, can, perhaps, recall confusion in her thinking, due to conflicting social standards.

Social Experimentation.—In taking stock of her assets and liabilities, as far as adjustment to her fellow students is concerned, the student nurse may be inclined to worry about some of her shortcomings but, in looking back to her childhood, she can scarcely fail to be impressed by the extent of her social growth and also by the possibilities of continued change. We do not, as a rule, appreciate how much social experimentation is back of our happy or unhappy adjustments. To see social experiments we need to spend only a short time watching a group of young children who are unaccustomed to playing with companions of their own age. Children entering nursery school are often quite unprepared to adjust to their small associates. In one preschool group, a rotund little boy of two discovered, perhaps by accident, that he could bowl over almost any other child in the group, merely by bumping into him. The results were, of course, disturbing to the other children but they were, apparently, most gratifying to the young experimenter. A thoughtless observer might be inclined to conclude that the little boy was fundamentally aggressive and anti-social when, as a matter of fact, he was manifesting a social interest in his own individual way. It is not likely that he bumped into other children because he preferred that type of actual physical contact; it is possible that he wanted social contacts of some kind and that he did not know how else to bring them about.

Enter the Issue—Child Made.—Unfortunately for the little boy whose social aspirations were expressed so unwisely, he very soon found himself a social outcast. The early experiments of young children often result in friction. Quarreling is not uncommon among children of preschool age. One experimental study revealed the fact that, on the average, each child in a preschool group had one conflict every five minutes.⁷ Quarrels were brief, however, lasting less than one-half minute.

In view of the fact that social adjustment involves a large degree of experimentation it is not surprising that the three-year-old child has greater difficulty than he will have when he is a year or two older. Observations of young children at play indicate that children very often quarrel about property. Bodily assault such as that perpetrated by the round two-year-old who bumped indiscriminately into his associates seems to be less provocative of quarreling than disagreement about the use of property.⁸

Adults often contribute to children's social adjustment by suggesting various ways in which they might solve issues. In one preschool group two very small boys were seen pulling at a wagon. The one who held the handle,

the child who, apparently, had prior rights, was holding on with great determination while the other tried to jerk the wagon out of his hand. He was heard to say repeatedly, "May you have my wagon." Finally, his patience exhausted because he could not encourage the other child to use the technic which he had been taught, he said, "May you have my wagon—No." This illustrates very interestingly a child's acceptance of a social standard and his inability to abide by the standard unless the other child would go half way. Adults often have similar problems.

Discipline of the Group.—It is sometimes assumed that a group of children can discipline members better than can an adult. The *School of Hard Knocks* is sometimes extolled by those who believe that the discipline of modern parents and educators is too soft. Children, and adults as well, do learn social give and take from one another. In fact, it cannot be learned apart from the group. Some children in a vigorous group learn that certain acts of aggression are not to be tolerated. Some learn that violence is to be met by violence. In many instances, children learn from one another what *not* to do, but, in the *School of Hard Knocks* they seldom learn the more socially approved technics which enter into gracious living. The difference between children who are self-taught and those who have been wisely guided is illustrated in a study of some acts believed to be socially acceptable by children in kindergarten, first, and second grades.*

One group was made up of children in a private kindergarten; children in another group were in public school kindergartens and first grades in New York City; and the third group included children in the first and second grades in a foreign district outside New York. This particular group of private school children had more guidance in their social adjustments than children ordinarily have. The children from the outside school had a minimum of parental guidance. The differences in the responses of the three groups raise some interesting questions concerning the development of social concepts. The children were asked to indicate which of several solutions to some social problems they believed to be best. Two of the problems were: *what's the thing for you to do if a playmate hits you without meaning to do it* and *what should you do if someone wants to borrow your book*. The children, as a group, did not sense the full significance of the phrase, *without meaning to do it*. (Tests given to hundreds of children in the course of standardizing the Stanford Revision of the Binet-Simon Test, discussed in Chapter XIII, suggest that children as young as these, do not, as a rule, consider the motives of their fellows.)

The children in the public school group, in response to the question about

* From an unpublished study by the author.

being hit, selected from the alternative offered them as follows: *tell his mother*, 29 per cent; *hit him*, 26 per cent; *cry*, 13 per cent and *do nothing*, 32 per cent. Of the children in the private school who were, of course, younger, on the average, than the New York public school group, 41 per cent selected the answer, *tell his mother* and only 12 per cent indicated that they would *hit him*. The children from the foreign neighborhood who were older, on the average, than either of the other groups, made a significant response; 17 per cent said that they would *tell* and 55 per cent selected the answer, *hit him*.

Similar differences were evidenced in replies to the question about borrowing a book. Children in the private kindergarten and those in the New York public school group indicated that they would *give it* to him, 70 per cent of the private kindergarten group and 57 per cent of the group made up of kindergarten and first grade children selecting this alternative. Of the older children from the school outside New York, only 28 per cent would *give it to him*, 18 per cent would *tell him he's a bad boy* and 44 per cent selected the answer, *put it behind you* so that he cannot get it. The *School of Hard Knocks* in this instance, seems to have taught rugged and ungracious methods of dealing with social problems.

Children are not, as a rule, altruistic (unselfishly benevolent). They are, of necessity, self-centered during early childhood because they are unable to put themselves in another child's place. Growth away from a self-centered outlook toward a more altruistic point of view seems to be a matter of slow growth, even with the wisest guidance. If left to themselves to solve their social problems in direct and primitive fashion, their growth is, of course retarded. In response to the question, *what's the thing to do if you have broken something which belongs to someone else*, a young child is likely to respond as did a five-year-old, "Why, if it belongs to someone else,—then I wouldn't do anything."

To test the readiness of a small group of eight-year-old children to consider a problem from the standpoint of another person, the children were asked to say what should be done under certain circumstances.* The situations were presented in story form, with pictures. One illustrative problem on a childish level follows.

Sally and Peter were setting the table for supper, and Sally knew that Peter wanted to use his own cup, so she got it to put it on the table. While she was carrying it, she stumbled and fell and broke the cup. What do you think that Peter ought to do?

* From an informal study made by the author.

In their replies, more than one-third of the children, suggested retaliation in terms such as "get even with her", "take hers". More than one in four, responded practically, "get another". Four expressed a tolerant attitude and suggested that they would admonish her to do better next time. Only two of the twenty-eight expressed a non-critical attitude; in one case a child responded, "thank her", and in another instance a child said, "give her another chance". Except in the case of one child who had overheard a later test which gave the cue, not one reply indicated an appreciation of motive.

By-Products of Social Experimentation.—In their contacts with companions of their own age children lay the foundations of habits such as leadership, followship, aggression, submission, tolerance and prejudice. Many of the older children in the study just mentioned were well launched upon habits of aggression at the age of six or seven. Others in the same group were, no doubt, forming the habit of yielding to force. Some of the children in all three groups were, at the time the study was made, learning to lead while others were learning to follow. Many were learning to be aggressive upon some occasions and submissive at other times. In some subtle fashion all were learning attitudes of prejudice toward or tolerance of their companions. Among the children who had the least guidance in their social adjustments, the balance between aggression and submission, leadership and followship, and broadmindedness or prejudice seems to have been left largely to chance. The youngest group of children evidenced a remarkable amount of broadmindedness, considering their age.

Aggression—Submission.—It is not possible to separate home and family influences from influences of friends outside the family. A child learns in his play group what his family has gotten him ready to learn. Children who are very submissive often come from homes in which they have been greatly restricted by their parents, although excessive restriction in the home sometimes has the opposite effect. Children may be aggressive with playmates because parental domination has made them feel inferior. Extremes of aggressiveness or submissiveness are due to many factors among which a person's attitudes toward himself are highly significant.

Leadership—Followship.—Children who lead, in contrast with those who follow, are usually children who have been encouraged in the home to be independent. They also tend to be children who have had many well-guided social contacts. According to some social psychologists, learning to lead implies learning to look for one's own *cues*. The way in which one child may learn to find his own cues, while another learns to watch an older child for his cues, is illustrated by May, in his *Social Psychology of War and Peace*.⁹

The father of two boys, aged three and six, often brought candy when he returned from work. Upon one occasion, the older child heard his father's footsteps and started to run. The younger child did not get his own cue, in this instance, but ran after his brother, following without knowing why he followed. Both children received the candy. In the case of the older child the cue to run was the sound of his father's footsteps, in the case of the younger child the cue to run was the sight of his brother running. Both were rewarded. In some such way as this, leaders and followers are made. The leader learns to find his own cues and the follower learns to take his cues from another person.

Broad-Mindedness—Prejudice.—Prejudices against certain groups, like other social habits and attitudes, are nurtured in the family, but are developed in social groups. Children will play with members of other racial, nationality and religious groups without discrimination, if uninfluenced by adult prejudice. Unfortunately, adult attitudes are passed on to children and are reflected in their play adjustments. Young children are often heard hurling epithets at members of minority groups. Attitudes of intolerance and prejudice develop so gradually that it is difficult to trace their origin in many instances. Broad-mindedness, on the other hand, never seems to develop as freely and spontaneously as biased and prejudiced attitudes in reference to associates. In attempting to trace social attitudes which are learned from peers in childhood, we cannot find much evidence that impartiality and attitudes of tolerance are learned from child companions. Apparently such attitudes are the result of wise guidance.

Group Loyalties.—The student nurse can undoubtedly remember how vital it was to her happy adjustment a few years ago to do what her companions did, to dress as they did, wear her hair as they did, cultivate the same enthusiasms and prejudices,—in short, to be as much like her associates as possible. The "lone wolf" in the company of his peers is a person who is not typical of adolescent youth. Friendships formed during this period are highly significant in their influence upon social attitudes. Much, of course, depends upon the kind of friends that are chosen, but even in gangs which have a tendency toward delinquent behavior it appears that members of the gang enjoy a certain sense of security in comradeship. Loyalty to friends is characteristic of many girls and boys of high school age. The homesickness sometimes experienced by the student nurse during the first few weeks of her training is occasionally due to her separation from friends as well as from her family.

Prejudice.—As has been said, the older child wants very much to be a worth while member of a group of companions of his own age. Membership

in a close group, however, always implies the barring of certain other persons from the group. A gang or *crowd* satisfies a common human need to belong, but thoughtless, and in some instances, heartless exclusion of those who are not members of a chosen group sometimes encourages attitudes which threaten the very groundwork of democratic organization. Prejudice or *pre-judgment* is a likely product of an extreme loyalty to one limited group. With prejudice, there often develops a tendency toward what the social psychologist calls *scapegoating* (holding an innocent person responsible for conditions one does not wish to acknowledge as his own responsibility).

With prejudice and an aggressive attitude toward certain persons it is easy for members of a group to project blame for all sorts of things upon the innocent victim who is the object of prejudice. Under conditions of great stress, as in wartime, a normal tendency to place the blame for shortcomings upon another person is so exaggerated that great cruelty results. The persecution of the Jews by the Nazis is an extreme manifestation of a tendency which is easily developed through a false interpretation of blind loyalty to a chosen group.

Group Standards.—The devotion of girls and boys of high school age to their peers often leads to a rather rigid adherence to group standards. In their desire to be like their friends and to be liked by them, young adolescents are made more fully aware of standards and moral codes than they have been before. In their loyalty to the standards of their group they have an opportunity to encourage certain habits of social responsibility. Difficulties often arise, however, because associates do not all adhere to the same standards. In adjusting to associates who are different, a person may sometimes learn to be *interested in differences* and hence may develop attitudes of tolerance or broad-mindedness. On the other hand, he is often confused by conflicting standards and is not at all sure what he does believe about certain basic issues. Social and economic differences are often felt quite keenly by adolescents.

Attitudes toward larger social and economic problems are influenced somewhat by economic experiences in youth, even though not all children whose families fail to live up to the economic and social standards of the community have difficulty in adjusting to their peers, and not all whose parents set the pace for their neighbors are self-conscious about their status. There is usually a tendency for young persons to be very much aware of differences in social status. Living on the right or on the wrong side of the tracks, a person's social outlook is often conditioned by the perspective which he has on the social scene. Considering the problem of economic inequalities from just one standpoint, we might contribute to our understanding of the com-

plexity of social attitudes if we were to consider differences in adjusting to economic lack as illustrative of adjustment to other inequalities.

Levels of Aspiration.—Why is it that some persons who are exceedingly deprived, economically, or who are socially handicapped in some other way differ so much in their adjustments to their limitations? Some give evidence of practically no resistance, others appear to be steadfastly determined to change their status and still others are generally aggressive. Different reactions seem to be based upon differences in *levels of aspiration*. A desperately poor person, for example, sometimes appears to be resigned to his poverty and, therefore, non-resistant. He may be resigned because he does not aspire to something better. Such persons do not appear to be greatly frustrated. Their outlook on all social problems is colored by their non-resistant attitudes toward their own limitations. Other persons whose status is better, but still below the average of their community, are often more greatly frustrated than the persons we have been describing, and, therefore, have a decidedly different outlook on social issues. Social attitudes due, partially, at least, to social inequalities, while they do not follow a pattern, can be roughly classified. Some persons fall so far short of group standards that they appear to aspire to little for themselves or for others. Other limited persons are spurred to make a strenuous effort to better their condition, so as to be more like their associates. Some, instead of limiting their aggressive activities to forthright attempts to improve their status, become generally aggressive and rebellious in their social adjustments; these are the *antis* with whom all are familiar. They are ready to participate in group aggressions of all sorts.

Those who cooperate best in constructive group enterprises are the ones who are reasonably well satisfied that they compare favorably with their neighbors. This does not mean that they are economically and socially at the same level; it means that they are self-respecting and not greatly frustrated in their social and economic adjustments.

Obviously, variations in attitudes due, in some measure, to economic differences are not characteristic of only those who are limited. Those whose status is, in certain respects, superior differ just as much. We need not discuss further differences in social outlook, if we can appreciate the fact that *perspective*, due to social status, is of tremendous significance in explaining differences in attitudes toward larger social issues. The tendency to view the social scene from wherever one happens to sit is characteristic of human nature.

Some social beliefs and habits which have been established in childhood tend to persist throughout life. On the other hand, everyone has many attitudes which are not firmly fixed; a normal person is easily encouraged to change his opinions. Often other persons help him to believe what they want him to believe. Life in a social group involves a tremendous amount of social pressure, some of which is deliberate and much of which is unplanned. Everyone who has lived through a period of world war cannot fail to be aware of the deliberate efforts that are made to influence public thought. We are not, as a rule, so well aware of indirect pressures.

One-sided Presentation,—Propaganda.—For an illustration of one-sided presentation of facts, we have only to follow any important political campaign or to read news reports of a politically-controlled press such as the press of Germany or Japan during World War II. Not only is but one side of an issue presented, it is presented in such a way as to suggest that there is no other side. Unless she has been encouraged to consider all prominent social issues as two-sided, the student nurse is more likely than not to follow the habits of childhood and to look at only one side of issues which are actually controversial. It is not easy to weigh arguments. To test her ability to value an argument which supports a point of view which is opposed to the one to which she subscribes, the student is referred to item 4 in the exercises which follow this chapter. The purpose of the test from which excerpts have been taken, is to measure a person's ability to judge as a good argument one which supports an opposing side, and to judge as a poor argument one which is less good from a standpoint of logic, but which supports the reader's point of view.

A careful reader of the newspapers can detect waves of propaganda designed to influence public thinking. At one time during World War II, optimism and a determination to win were stressed in the press. At another time columnists and editorial writers generally cautioned against over-optimism. Even the most independent of thinkers is swayed by deliberate attempts to control the direction of his thinking and to formulate certain of his beliefs.

We have some direct experimental evidence of the influence of the press upon public opinion. In one study, editorials were "planted" in a paper and college students were urged to read the papers under different conditions.¹⁰ The papers were alike except that in one form a favorable editorial pertaining to a visitor from abroad was published and in other papers an unfavorable editorial was printed. College students who read these papers did not know anything about the nature of the experiment. No student knew anything about the visitor prior to reading the editorial. After reading the editorial,

there were only two students in one hundred of those who had read the favorable editorial who did not show that they had become favorably inclined toward the visitor, while only fourteen in one hundred of those who had read the unfavorable editorial appeared to be free from prejudice against him.

Leisure Reading, Motion Pictures and Radio.—We are probably influenced more by leisure reading than we realize, although reading is more likely to exert a direct influence upon attitudes than it is upon behavior. Among the books which flourished during the childhood of a few of the parents and many of the grandparents of the present generation are some in which the intent of the author to influence young readers is clear. The *Elsie* books for girls which were read widely during the latter half of the 19th Century, are typical of these. Elsie was a very pious child who entertained religious scruples which were not shared by her father. She is portrayed as a noble and heroic figure. Upon one occasion, when her father insisted that she play the piano on Sunday, Elsie, according to record, sat on the piano stool, refusing to move, until she fainted. Certain attitudes toward Sunday observance and very questionable attitudes toward fathers were undoubtedly encouraged in some instances.

In a series of books for boys, written by Horatio Alger and read at about the same time that the *Elsie* books were popular, the theme of social success through will power was persistently brought to the attention of readers. The hero of these tales was usually an impoverished youth who overcame tremendous odds and rose to a position of power in the community. Just how greatly books such as these may have contributed to a belief that a will to succeed is a means by which anyone can reach any goal that he may set for himself will never be known.

Not all books, stories and magazine articles are written with an intent to tell readers what to believe, but the young person of today is bombarded by drama, fiction, biography and serious discussions which cannot fail to influence social attitudes toward issues of many kinds.

The influence of motion pictures upon social attitudes (more than upon behavior), appears to be very great. After showing pictures which have not necessarily been made for the purpose of propaganda, measurable changes in attitude have been experimentally studied.¹¹ Change in attitude was tested by comparing responses made after seeing the picture with responses made prior to the showing. One picture, *Sons of Gods*, caused the attitudes of children included in the experiment to shift so as to become more unfavorable toward the Chinese. Just what influence that particular picture might have today, since the war has caused us to be more favorable toward Chinese

than to many other nationalities, would be difficult to say. Another picture, *The Birth of a Nation*, resulted in shifting and less favorable attitudes toward the Negro. The picture, *All Quiet On The Western Front*, and a similar war picture, *Journey's End*, caused children to be less favorable toward war. If *The Birth of a Nation* or the two war pictures were to be shown today to children who have experienced war and who have heard many discussions of race antagonism, we have no means of knowing what the influence upon attitude might be. The accumulated evidence of various experimental studies indicates strongly that motion pictures are a force with which we should reckon, in trying to discover how many of our social attitudes are being reinforced.

Radio broadcasts should not be overlooked in a survey of pressures influencing attitudes. When political issues are discussed, the radio, probably, reinforces attitudes already held more often than it stimulates a change of viewpoint. Programs such as *America's Town Meeting* encourage open-minded discussions of controversial problems. The extent to which a person's social attitudes may be influenced by broadcast programs depends, of course, upon his choice of programs. Children, as well as adults, often listen to news commentators and quiz programs as well as to mysteries, sports, and variety shows.¹²

Church, School and Youth Organizations.—We have sketched a background of early experiences which is characteristic of almost any adult, believing that we can best understand our social habits, standards and attitudes, as adults, if we consider some of the experiences which have influenced them. There is no reader of this text who has not spent many years in school. Most, no doubt, have a background of experiences in the church and church school. Many have been members of youth organizations such as the Girl Scouts, Girl Reserves or 4 H Clubs. If asked to state what has been the contribution of church, school and youth groups to her present social outlook, the student would have difficulty in defining the precise contribution of each. The teaching of moral and ethical codes is the avowed responsibility of each organization, but the student has learned her code not only from these organizations but at home, from her friends, from her leisure experiences and from a combination of all the experiences which she has ever had. She has learned whatever attitudes of social responsibility she may have in a similar way. She has learned habits and ideals of democratic living from opportunities that she has had to live democratically in a situation in which democracy is interpreted.

Democratic Living and Social Attitudes.—Many of us, in childhood, have sung with great gusto about a *sweet land of liberty* which was said to belong

to us. It may seem to some of us, in retrospect, that devotion to this fair land of ours was measured by the volume of our lungs and the hardihood of our vocal cords. Did the singing contribute to our habits of democratic living,—social responsibility, respect for our fellows, and a love of fair play? The chances are that it did not contribute greatly to either an understanding or an appreciation of what it means to live democratically. Democratic attitudes develop through living democratically. Homes, schools, churches and organizations for youth provide some of the situations in which such learnings may take place, but much seems to depend upon the leader.

The role of the leader in influencing social adjustment is illustrated in a study of three types of leadership of groups of ten-year-old boys.¹³ In one group the adult who took charge behaved autocratically and told the children just what to do and how to do it. He told them with whom they should work. In other words, the control of the group rested entirely with the leader, who, for purposes of the experiment, was consistently an autocrat. In the second group the leader left the children to their own devices and made practically no suggestions. The adult did not enter into the work with the children. This group was designated as *laissez-faire*. In the third group, the leader was just as democratic as possible. He discussed the work with the children and worked with them, but he encouraged them to make decisions for themselves. This was labeled the *democratic* group.

Children in the group in which the leader was *autocratic* were much more hostile in their relationships with one another than were the children who were guided democratically. They were more resistant and demanded much more attention. Some children who were submissive to the adult leader were aggressive in their attitudes toward other children. In the *democratic* group the teacher could leave the room without bringing about any change in the children's behavior, but in the autocratic group, the children very often became irritable and aggressive. It is reported that upon two occasions the children in the autocratic group persecuted one of their number as a scapegoat. In the *laissez-faire* group, the children were disorderly and disorganized whether the leader were present or not.

Continued experience in groups of the three types would obviously influence social adjustment and democratic attitudes immeasurably. The study throws into high relief experiences which underlie contrasting attitudes such as hostile aggression on the one hand and democratic cooperation on the other.

If there were no factors influencing attitudes other than those which have been indicated so far, children and adults living in the same community, reading the same papers, going to the same churches and schools, and seeing the same movies would be much more alike in their social attitudes than they actually are. As a matter of fact, if it were possible to compare the social attitudes of a number of persons who are similar in many respects, it is most unlikely that any two could be found who would not differ decidedly in certain other respects. The reason why such differences exist in any group are as numerous and as varied as the personalities compared.

Being different from the average in personal traits, family social status, in race, or in color is in itself a cause of uniqueness in outlook. Any combination of circumstances which sets a person apart as one who is unlike the majority of his associates influences that person's social attitudes. One who, for example, is extremely short, tall, fat, lean or swarthy cannot have precisely the same outlook on his personal-social relations as if he were more nearly average in height, weight or skin coloring. A very tall girl worried about her height until she discovered a series of newspaper articles describing models under the caption "Long-Stemmed American Beauties". Because she no longer felt it necessary to slump in order to appear less tall, her posture, carriage and social outlook changed. A dark-skinned girl worried greatly about her swarthy complexion until she became convinced that her coloring was an asset. Like the tall girl whose change in her evaluation of height changed her social outlook, the dark-skinned girl attained a new social viewpoint when she placed a new value upon her brunette beauty.

The aggressiveness of an extremely short person is sometimes due to a belief that such behavior is necessary in order to "put oneself over". Physical defects or weakness may have a similar effect upon social attitudes, because everyone's outlook depends basically upon his beliefs about himself and his neighbors, and especially about himself in relation to his neighbors. Anything which causes a person to feel tense causes him to have a social outlook which is more or less unique. The social world as he sees it, may be out of focus. As has been said earlier, we cannot do otherwise than view the social scene from wherever we may happen to sit.

SUMMARY

Social learnings involve every aspect of a person's behavior in relation to his fellow man. All overt habits, standards, and attitudes enter into social behavior.

We judge a person's *attitudes* by what he seems to be most ready to do, under certain conditions, by the opinions which he expresses, and by the beliefs which seem to underlie his habitual adjustments. Attitudes give direction to a person's behavior.

Attitudes are learned, indirectly, as a rule, and continue to change, somewhat, even in adult years.

Everyone is born into a world of ready-made values, established by those who have been born earlier. Beliefs, antagonisms, prejudice and tolerance of certain groups, attitudes toward social issues, religious beliefs and standards of personal morality,—all such attitudes are among the ready-made attitudes which are often adopted uncritically.

Most of our attitudes are influenced fundamentally by experiences which we have in family groups.

Relationships between parents and young children are often such as to emphasize issues. While issue experiences represent only a limited aspect of family living, they appear to be highly significant in determining certain later attitudes. Companionable relationships, on the other hand, are immeasurably significant in determining certain other, and more socially useful, attitudes.

Among the by-products of parent-child relationships are the child's standards of right and wrong, his beliefs about himself, his beliefs about adults, in general, and his beliefs about himself in relation to adults. Such beliefs are the basis of attitudes which, in later life, are to influence his adjustments to his parents and his tendencies to be aloof or to be a cooperative member of his group. A person's *beliefs* about himself and about the role he is to play in social life appear to be more important in social adjustment than his more readily observed social *habits*.

In adjusting to peers, children tend to proceed experimentally, (as do adults). Because of their limited experiences, children are sometimes very unwise in their choices of experimental procedures.

Children (and adults as well), are disciplined by the group. Standards of right and wrong are likely to be based upon whatever has been tried and found to be reasonably successful.

Altruism, *the ability to think in terms of another person*, a characteristic of a socially mature person, appears to be a product of carefully guided experiences and a matter of slow growth.

When wise guidance is lacking, the balance between habits such as aggression and submission, leadership and followship, and broadmindedness and prejudice seems to be learned, more or less by chance, in the "School of Hard Knocks."

Older children, as a rule, seem to place a high value upon membership in a group of their peers. Strong loyalty to friends is characteristic of many girls and boys of early adolescent age.

A gang or a crowd can satisfy a common desire to *belong*, but, with membership in a limited group, there is a tendency to *exclude* certain persons. Prejudice or *pre-judgment* of those on the outside is a likely product of extreme loyalty to a small group.

A person who is the object of prejudice is sometimes an innocent victim of aggressive action against him. He may be blamed for the shortcomings of the aggressors; he is sometimes made a *scapegoat* who is held responsible for conditions which the aggressors do not want to acknowledge as their own responsibility.

Adjustment to social or economic deprivation seems to depend upon one's aspirations more than upon actual lack of ability to live up to the standards of associates. Some persons fall so far short of group standards that they appear to be indifferent to their status. Other limited persons are spurred to make strenuous efforts to raise their social standards. Some become aggressive and rebellious in their social adjustment. Different reactions seem to be based upon different *levels of aspiration*.

A person whose standards of living are higher than those of his group cannot have exactly the same outlook as he might have if he did not find it so easy to maintain his way of living.

Those who cooperate best in group enterprises appear to be persons who are reasonably well satisfied that their status is not questioned.

Attitudes which are not firmly fixed are readily influenced by social pressures. One-sided presentation of facts encourages bias in viewpoint.

Motion pictures, radio, and leisure reading tend to reinforce some attitudes and to change others.

Habits and attitudes favoring democratic living are partially learned in childhood, but continue to develop through adult years. Democratic habits and attitudes develop through living democratically. Homes, schools, churches, and organizations for youth provide some of the situations in which such development is encouraged.

Much seems to depend upon leadership. Hostility and aggressive attitudes are more characteristic of those who have been governed autocratically than they are of those who have been guided by a democratic leader. The democratic leader encourages democratic living.

Personal factors influence social attitudes. Being different from the average in basic respects, a person cannot fail to be somewhat unique in his social outlook.

SUGGESTED ACTIVITIES

1. **Experiment.** Start a rumor among members of the class, asking each student to pass it on. When all have heard the rumor compare notes to discover what has happened to the rumor in transmission. Formulate your rumor this way, "It is rumored that" (fill in at this point).

2. **Interviews.** Discuss the *Elsie* books and Horatio Alger stories (or other stories which were popular some years ago), with some older persons. Ask them to tell you whether they believe that such stories influenced their attitudes in any way.

3. **Discussion.**

(1) The study of different types of leadership, mentioned in the chapter, is suggestive in relation to the nurse's supervision of a children's ward. One type of leadership seemed to encourage hostility and unfriendly relationships among the children, themselves. How might a nurse exercise democratic control over a group of hospitalized but convalescent children?

(2) Is the nurse ever autocratic in her attitudes toward adult patients? What are some of the by-products of experiences with a very autocratic person, even in adult life?

(3) Children who are very submissive sometimes come from homes in which they are greatly restricted by dominating parents. On the other hand, as the study of democratic leadership suggests, a child may react against domination by being aggressive whenever he can. Discuss the aggressive or submissive tendencies of some children whom you know. Can you trace a possible connection between the behavior of adults and the behavior of children? Can you relate this to hospital situations?

(4) As a student nurse, are you often greatly concerned about too submissive behavior upon the part of a patient?

(5) What experiences in your childhood do you believe to have contributed directly to your love of country or love of democratic living?

(6) Recall experiences, during high school years, or earlier, with conflicting standards. How did you solve the conflict?

(7) What evidence can you gather to suggest that some persons seem to like to keep their prejudices?

(8) Discuss motion pictures or radio programs which have influenced you and changed your viewpoint. (Sergeant York is illustrative of a picture which might cause a change of attitude toward conscientious objectors.)

4. **Evaluation of prejudices.** Score yourself on your response to the two sections of the "Arguments Test," (see Activities, Chapter VIII). Arguments favoring socialism are numbered 1, 4, and 6. Arguments against so-

cialism are numbered 2, 3 and 5. If you have rated *all the arguments on one side* as either *strong* or *weak*, and have given an opposite rating to all (or all except one), of the arguments on the other side, give yourself a *prejudice score* of 4. Score the section on profit sharing the same way. Arguments favoring profit sharing are numbered 1, 4 and 6. Arguments against profit sharing are numbered 2, 3 and 5. Your score does not serve as a measure of your prejudice, because you have used only two problems from a much longer test, but it should serve to stimulate thoughtful consideration of how prejudice often operates in relation to social issues.

Discuss. If you were to rule out personal beliefs, and were to consider only the strength of each argument, as a judge would evaluate the arguments of opposing sides of a debating team, which arguments should be considered *strong* and *weak*? Try to explain why you support the side that you do, presenting *facts, not opinions*.

5. Notebook suggestions.

(1) Try to trace the development of certain of your attitudes such as attitudes toward social responsibility, toward rules and regulations, co-operative enterprises, etc.

(2) Try to recall experiences which may have contributed to a prejudice which you admit.

SUGGESTED READING

Allport, Gordon W., and Murray, H. A (directing the study). *A B C's of Scapegoating*. This is a pamphlet distributed by the Central Y.W.C.A. College, 19 South LaSalle St., Chicago, Ill.

As the title suggests, the pamphlet is a simple but objective discussion of prejudice and ways in which prejudice may be evidenced.

Appel, Margaret Hunt. "Aggressive Behavior of Nursery School Children and Adult Procedures in Dealing With Such Behavior," *J. Exp. Educ.*, 1942, 11, 185-199.

Causes of aggression and methods used by teachers in guidance are discussed.

Cunningham, Bess V. *Family Behavior*, Philadelphia: W. B. Saunders Company, 1940.

Community pressures such as the press, radio and motion picture theatres are discussed in Chapter VI. Adjustment to community life is considered in Chapter IX.

Davis, Allison. "Racial Status and Personality," *Sci. Mo.*, New York, 1943, 62, 354-362.

As the title suggests, this is a discussion of adjustments to be made by minority groups.

Pillsbury, W. B. "Propaganda and the Democratic State," *Sci. Mo.*, New York, 1943, 56, 549-555.

The author discusses Germany under Hitler and considers the basis of beliefs and attitudes.

Shrodes, Caroline, VanGundy, Justine, and Husband, Richard. *Psychology Through Literature; An Anthology*, New York. Oxford University Press, 1943, 80-140.

Literary selections in this section portray social and economic pressures. Read selectively.

Thorndike, E. L. "On the Strength of Certain Beliefs and the Nature of Credulity," *Character and Pers.*, 1943, 12, 1-14.

This is a study of attitudes in which persons of high intelligence are compared with some who are less bright.

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- ⁸ MURPHY, Lois B. *Social Behavior and Child Personality*, New York: Columbia University Press, 1937.
- ⁹ MAY, Mark. *A Social Psychology of War and Peace*, New Haven: Yale University Press, 1943.
- ¹⁰ ANNIS, A. D., and MEIER, N. C. "The Induction of Opinion Through Suggestion by Means of Planted Content," *J. Soc. Psychol.*, 1934, 5, 65-81.
- ¹¹ PETERSON, Ruth, and THURSTON, L. O. "Motion Pictures and Social Attitudes," In Charters, W. W., *Motion Pictures and Youth, A Summary*, New York: The Macmillan Co., 1933.
- ¹² WEIL, A. R. "What Are the Wild Waves Saying?" *High Points*, 1942, 24 No. 7, 60-64.
- ¹³ LEWIN, K., LIPPITT, R., and ESCALONA, S. K. "Studies in Topological and Vector Psychology," *Univ. Ia. Stud. Child Welf.*, 1940, 16, No. 3.

Chapter X

EMOTIONAL LEARNINGS

To understand what is involved in emotional learnings we need to consider the organic basis of stress and strain. When we are emotionally aroused we are responding to actual changes within the organism. We have only to examine our everyday vocabulary to discover that we use many phrases which suggest our awareness of organic disturbance when we are emotionally aroused. In telling of an exciting or frightening experience we use such expressions as: "my hair stood on end", "the chills ran up and down my spine", "I couldn't breathe", "my stomach turned upside down", "my heart was in my mouth." Our behavior at football games, at the movies, and in other tensely dramatic situations in which we play spectator roles suggests that organic reactions are often greater than appear on the surface. We become rigid, clench our fists, or perhaps grasp the arm of a neighbor. All this suggests that bodily tensions accompanying excitement or other emotional conditions are actual. The reality of muscular tension, in even mild emotion, is indicated in the snapshot of a four-months-old baby, reproduced in Figure 38.

For Figure 38, see pages 140-141.

ORGANIC BASIS OF EMOTION

A person who is emotionally aroused is tense. He is experiencing sensations which are due to changes in the activity of his entire organism. Physicians, nurses, and others who are basically concerned with physiological functions find the psychology of human emotions a fascinating and practical study. Psychologists are very much interested in the physiological basis of emotional behavior. In discussing behavior we tend to make a distinction between physiological and psychological reactions which is not entirely justified by facts. As we study emotional behavior we can see that it is the *interaction* of the so-called "psychological" and the so-called "physical" which is of interest to physiologists and psychologists alike. *Bodily* and *emotional* well-being are not distinct conditions.

Laboratory Studies of Organic Change.—We are all familiar with the reactions made by a disturbed cat. The muscles are tense as the cat

arches his back and his tail becomes erect and rigid. We have seen the hair literally stand on end. The outward evidences of a cat's disturbance are unmistakable. Although human hair does not stand on end and muscles do not become so exaggeratedly tense as in the case of the cat, there is undoubtedly a parallel between human and animal behavior as far as bodily tensions and emotions are concerned.

Emotional Reactions of a Cat.—In a pioneer study, a cat was attached to an apparatus which made it possible to record normal digestive processes. During the first stage of the study, the cat was observed while drinking milk. Its body was relaxed, and its fur smooth. The recording instrument showed that digestion was proceeding normally. Suddenly a dog was brought into the room. The cat stopped drinking milk. It tensed its body, and it gave familiar indications of emotional disturbance. The recording instrument showed that the digestive process was checked by the entrance of the dog. Continuous recordings showed that the cat did not digest normally until some time after the dog had been removed from the scene.

Implicit and Overt Emotional Responses.—In a laboratory experiment, children of preschool age were subjected to ten situations which had been selected because each one would, presumably, bring about an emotional response.¹ An electrical device for recording changes in the conductivity of the skin (a skin galvanometer), was attached to each child. When a person becomes emotionally disturbed there is, commonly, a change in the amount of perspiration in the palm of the hand. The dampness of the hand is related to its electrical conductivity. In this instance, changes were recorded on a smoked drum. In addition to these records of bodily change, records were also made by observers who watched each child closely for outward evidences of emotional disturbance accompanying each situation. Some of the recordings and observations are shown in Figure 39, in which the reactions of three children are compared.

Child A, according to the record of observers, was not greatly disturbed by any of the test situations, although he responded more to test situation number 8 than to others. The skin galvanometer, however, occasionally recorded a greater amount of emotional disturbance than his outward behavior indicated. The records of B suggest that his overt behavior and internal responses tend to follow a similar pattern, at least in the experimental situations. The third child, C, did not conceal his emotions, and there is some suggestion that his implicit responses may tend to decrease as his outward manifestation of emotion increases. Overt behavior is, apparently, not always a reliable indication of the amount of internal stress a person may be experiencing.

Emotional Response to Motion Pictures.—In the light of our own personal experiences we know that motion pictures are often emotionally stimulating. In one experimental study, actual bodily changes were recorded by means of a clever device attached to seats in a motion picture theater.² The children were shown selected pictures, some of them depicting scenes of danger or adventure, and others selected because of their romantic interest. The recordings of younger children (under twelve years of age), showed marked evidence of bodily changes in response to adventurous pictures, but did not indicate marked change in response to pictures of romantic experiences. Older children in the experiment, in response to romantic pictures, gave evidences of bodily changes which were very much like those of younger children in response to adventure.

In the emotional disturbance of children, *after* they have seen motion pictures, we find an interesting parallel to the continued disturbance of the cat after the exciting stimulus had been removed. In a study of children's sleep under normal conditions and also after witnessing motion pictures, children's beds were suspended and wired in such a way that every motion a child made was recorded on a smoked drum.³ The recordings on the smoked drum showed that children who had attended movies were very much more restless in their sleep than they were under ordinary conditions. Experimenters estimated that the amount of excess activity was, in some instances,

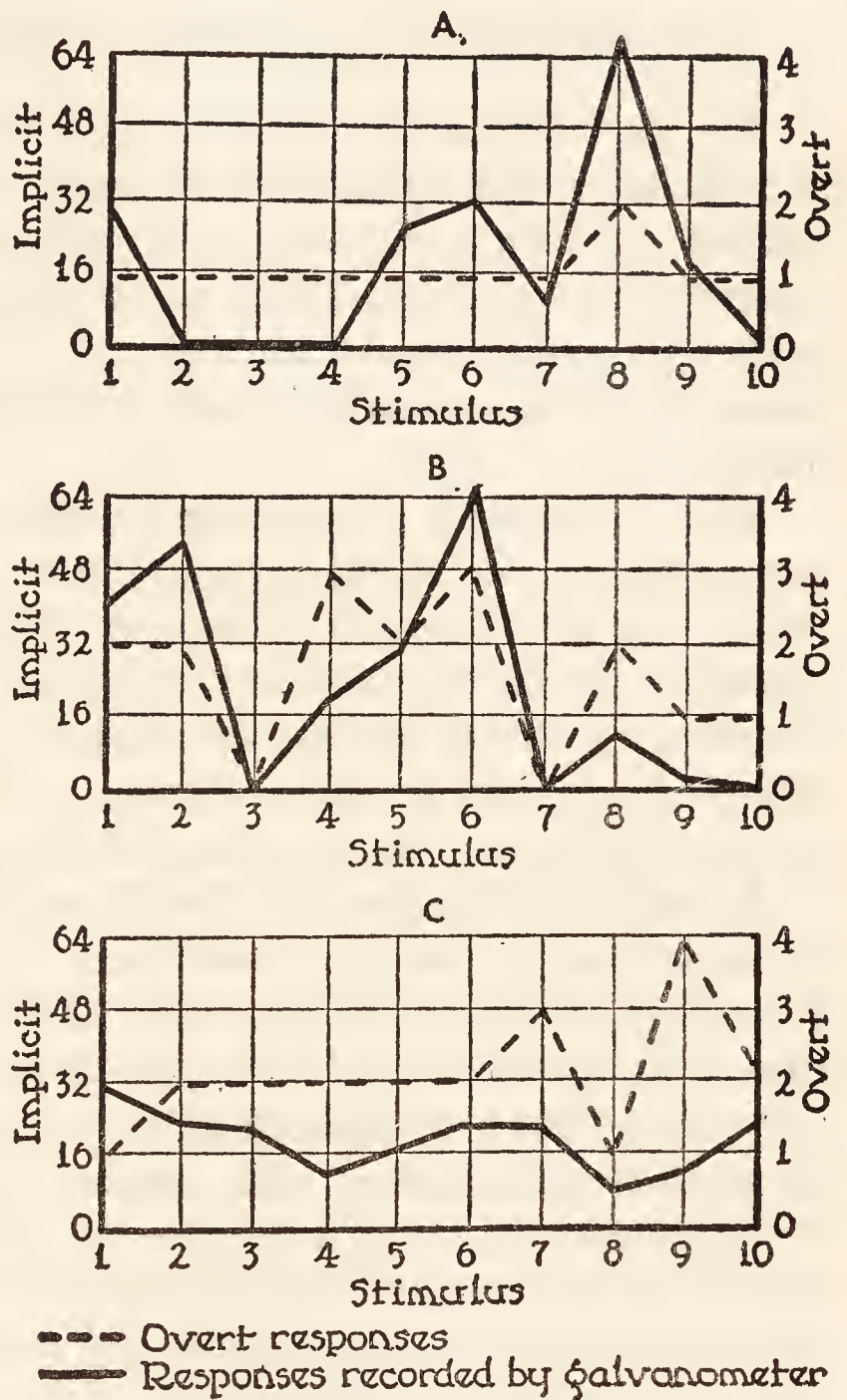


FIG. 39.—HOW THREE CHILDREN DIFFERED. IMPLICIT AND OVERT RESPONSES TO TEN DIFFERENT KINDS OF STIMULI.

(From Jones, Listener's Notebook No. 2, *Child Development*, The University of Chicago Press.)

as great as if the child had been given two cups of coffee or had been kept up until twelve o'clock. Experiments such as these confirm the belief that excess emotional stimulation brings about organic reactions which may persist for a long time.

EMOTIONAL LEARNING THROUGH CONDITIONING

In order to appreciate what is involved in emotional reactions we need to recall the complex nature of the human organism. *Behavior* (a change in reaction), is always the result of the stimulation of certain receptors. When a receptor is stimulated by energy to which it is adapted, an afferent or receiving neural impulse is aroused and is carried along fibrous branches of nerve cells to the spinal cord and brain, and from there to appropriate effectors.

When an afferent or receiving impulse is stimulated and propagated by nerve fibers to the central nervous system, it is probable that activity continues after the immediate stimulation. This continuation of activity makes it possible for the organism to respond not only to immediate but to recent stimuli also. This is perhaps the basis for the phenomenon known as *conditioning*, a process by means of which a response which is made normally to one stimulus may become linked with another stimulus.⁴

Laboratory Studies of Conditioning.—Pavlov a Russian physicist, is responsible for the term *conditioned reflex*, which occupies a prominent place in psychological literature. He was among the first scientists to investigate conditioned learning in animals. He and his associates demonstrated the fact that a response which an animal normally makes to one stimulus can be experimentally linked with another stimulus.⁵ In one experiment, for which Pavlov is famous, a dog was the subject. Through operative technic, Pavlov and his associates made it possible for the dog's saliva to be measured. The dog was placed upon a table and confronted by food. The normal response, of course, is salivation. The response of salivation is known as the *unconditioned* or basic response. It is a firmly established response which varies little from time to time. With the food, however, in the experimental situation, a new stimulus was introduced, the ringing of a bell. Time after time as the bell was rung, food was placed near the dog. After a number of such repetitions, the bell was rung without having the food present. It was observed that the dog salivated in response to the bell. The bell in this case was the stimulus to which a conditioned response was made; the bell served as a substitute for the stimulus of the food which normally brought about the response of salivation.

Watson, at Johns Hopkins University, performed a related experiment with a baby. The baby, Albert, who has since become famous in psychological literature, showed a normal interest in animals. A white rat, like many other near-by objects, caused him to reach.⁶ Like other babies, Albert was disturbed by a harsh and sudden noise which was made by striking a steel bar with a carpenter's hammer. After making sure that Albert's reaction to the rat was a positive one and that the baby reached for the rat consistently, the iron bar was struck when the rat was presented. The stimulus of the rat encouraged Albert to reach. The sudden harsh noise made it imperative for him to shrink back and to withdraw his hand. Obviously he could not do the two things at the same time. The response to the harsh noise proved to be the stronger of the two responses. As in the case of Pavlov's dog who learned to salivate in response to the conditioned stimulus of the bell, Albert learned to withdraw from the rat because of the presentation of the rat and the noise simultaneously.

Before he was subjected to the experiment, Albert had been responding happily to animals and other furry objects. After the experiment it was discovered that he withdrew and appeared to be emotionally disturbed when confronted by a rabbit, a dog, a fur coat, cotton, wool, and even the hair on the experimenter's head.

Watson's experiment suggests two characteristics of emotional learning: *one*, a stimulus which normally does not produce an emotional reaction, can, if repeatedly linked with a stimulus which does cause an emotional reaction, become a substitute for the normal stimulus; *two*, conditioned emotional reaction having been established, it may be elicited by all sorts of stimuli which remotely resemble the one responsible for the conditioned response.

Spread to Related Situations.—An interesting illustration of the spread of an emotional reaction so as to link it with varied stimuli was noted in a baby clinic. A twelve-months-old baby who had been unusually cooperative in her performance on motor tests played happily with the clinic nurse in the laboratory, until the nurse left the laboratory and returned wearing her white coat. Immediately the baby's response to the nurse changed. She withdrew, refused to participate in the motor test, and when she was approached by the white clad nurse with whom she had formerly been friendly, the baby cried. There was no evidence at hand to show why the baby made this emotional response to the white coat. It is probable that at some earlier date, she had had an emotionally tense experience which was in some way connected with a white coat.

A similar tendency is to be observed in adult life. An instance is recorded in which a woman became very much disturbed whenever she heard the sound

of a church bell. She could not say why church bells of any kind caused her to feel so disturbed, but investigation brought to light the fact that she had heard bells ring at the moment of her mother's death, and that she had from that time on been emotionally aroused by church bells.

In the case just cited, the woman did not recall that her morbid response to bells had dated from the time of her mother's death. As a general rule, the source of such conditioned emotional reactions is probably not remembered. A patient in a hospital may show a decidedly unfavorable attitude toward a certain nurse without having had any recent experiences which might explain her attitude. The nurse who understands the nature of emotional conditioning can appreciate the fact that a patient's attitude toward her is not necessarily personal. It may be that the nurse resembles in some way, either in appearance or in manner, a person toward whom the patient has been unfavorably conditioned. Conditioned emotional responses are not necessarily unfavorable. If a nurse reminds a patient of someone whom he has known and liked he may respond favorably to her. This tendency is suggested in the response of the child who is ready to like the nurse who does for him the things his mother normally does.

What Is Basic in Emotional Conditioning?—Many of the studies of emotional conditioning have been studies of fear responses. Other emotional reactions are, no doubt, conditioned similarly but, since most of the experimental data pertain to fear, we know more about that aspect of emotional conditioning than we do about others. In the case of Albert, the Johns Hopkins' baby who was taught to be afraid of animals, no one isolated experience was responsible for his conditioned fear. In the cases of the clinic baby who evidenced fear of the white coat, and the woman who was disturbed by bells it is possible that a single highly emotional experience may have been responsible for the fear. Whether or not a fear response is to be easily conditioned seems to depend upon many factors. A person who is ill-at-ease, tense, and disturbed is ready to be unfavorably conditioned.

This tendency is illustrated in the case of a child of about two years of age who, after a period of temporary residence in a day-and-night nursery, developed night terrors and screamed in fear whenever his mother attempted to undress him. A study of his case showed that he had been put into the nursery when his mother became hospitalized. Although there was, apparently, no reason to believe that the child had not been treated well in the institution, the fact that his night terrors dated from his residence there indicated that he had experienced a period of emotional stress when away from his mother and ill-at-ease in strange surroundings. Several years later it was discovered that he was exceedingly fearful of fire engines. The original cause

of his difficulty was never discovered, but an interesting theory was formulated by psychologists who studied his case. They decided that his conditioned fear might very well have been due to a passing fire engine. It is possible that, because of his tense state and his uneasiness in the new situation, the sound of a fire siren and the moving light upon the walls as the fire engine passed his room may have occasioned a marked fear reaction which from that time on was linked not only to fire engines but also to separation from his mother, being undressed for bed, being left alone in the dark, and all related situations.

A different illustration of readiness as a factor in emotional conditioning is found in the case of the child (mentioned in Chapter III), who went to the hospital expecting an "ice-cream party." She was not fearful or ill-at-ease when she entered the hospital. In her case, a fear reaction was conditioned easily because she was ready for something entirely different from what actually happened. She went in cheerfully and expectantly and was greatly shocked when the ether mask was applied.

Following her hospital experience she was taken to a child's clinic for psychological study. As soon as she entered the elevator she began to cry with fear, possibly because the elevator reminded her of the elevator in the hospital. Out of the elevator, and walking down the long corridor, which may also have been suggestive of the hospital, her fears were in no way allayed. Although accompanied by her own father and mother she appealed to the first strange person whom she met, asking the stranger to "not let them put anything" on her face.

Can Conditioned Emotional Reactions Be Unlearned?—If the nurse could not look forward to being of help to disturbed patients of all ages, a study of how emotional reactions are conditioned would be of little practical value to her. Experiments suggest that emotional responses can be unlearned in much the same way that they are learned. Worried, fearful, angry, and irritable persons need to be freed from the tensions that accompany emotional unrest. Nurses, like most other persons, with the kindest intent, often try to correct fears and other emotional responses by *talking about them*, by *evading the issue*, or by *calling attention to the serenity of others*. Turning once more to experiments with children (the best subjects for experimental studies), we can find suggestions for dealing with the emotional reactions of persons of all ages.

In a study of various ways in which children's fears might be overcome, a number of preschool children were the subjects of a significant experiment.⁷ The children were living temporarily in a day-and-night nursery. It was discovered that many of them were afraid of various kinds of animals, among

them a rabbit. The problem was to discover ways in which children who were afraid of the rabbit could be made unafraid. Various procedures commonly used by adults were evaluated experimentally.

Verbal Appeal.—A five-year-old girl who displayed a marked fear of the rabbit was the subject in this case. During the experimental period the child was not allowed to see the rabbit, while the experimenter attempted to cure the child's fear by talking about rabbits. She read rabbit stories to the child, sang songs about rabbits, showed her pictures of rabbits, drew rabbits, modeled them in clay, and played rabbit games. The child participated in the experiment with great interest and even showed that she was not entirely unaware of the experimenter's purpose when she said, "I patted the rabbit, and he didn't cry." At the end of the experimental period, the child was once more confronted by the rabbit. The results were as might have been expected. She showed just as much fear as she had shown prior to the experiment. The experiment suggests that fears and other emotional reactions are not to be corrected by merely talking about them.

Method of Disuse.—The method of disuse was similar to the one employed in the situation just mentioned except that it was not accompanied by verbal appeal. Children who were afraid of animals were merely protected from the sight of the feared animals, and after a period of time were tested to see whether or not there had been any change in their reactions. During the period of protection they were, of course, not practicing fear responses to the animals, but, on the other hand, they were not practicing positive ways of behaving toward the animals. Fears and other emotional responses are apparently to be changed only by practicing new responses. Nurses constantly find it necessary to shield patients from situations which are highly disturbing. Protection is necessary as an emergency measure, but the nurse should bear in mind that a person who, because of being shielded, does not make responses of fear, for example, is not learning how to be unafraid.

Social Imitation.—The nurse in charge of a children's ward makes frequent use of a procedure which, in the experiment, was called *social imitation*, when she hopes to help a disturbed patient by calling his attention to the good adjustment of others. She uses a similar method with adults, sometimes, but, when she does, she is usually more subtle in her approach. In the experiment, children who were afraid of the rabbit were confronted by the rabbit under different conditions: when alone, when in the company of children who were afraid, and when in the company of children who were unafraid. Their reactions were carefully recorded, and it appeared that some children were rather easily swayed by the reaction of the group, while others were practically uninfluenced. It seems that the value of social imitation in

this experimental setup depended upon the extent of the child's fear. If he were very much afraid, he continued to be afraid regardless of the behavior of his associates, but if he were only slightly fearful, just wavering between being afraid and being unafraid, he was influenced by the behavior of those around him. This would seem to be an important distinction for the nurse to keep in mind.

Direct Conditioning.—The most effective method of redirecting fears proved, in this experiment, to be the method of direct conditioning. This method, it is to be recalled, links a response to a new stimulus which has been presented simultaneously or closely connected in time with a prepotent or very strong stimulus to that response.⁸ Among the children who participated in the experiment, there was one child who might very well have been Watson's Albert grown a few years older. Various experiments indicated that he was very much afraid of furry animals and of anything resembling fur, such as cotton or feathers. This child, Peter, seemed to enjoy his food, so it was decided to use his favorable response to food and to link it, if possible, with the presence of a rabbit. At first he was willing to eat when the rabbit was in the room, only if the rabbit were on the opposite side of the room and in a cage. Patiently and persistently the food was presented when the rabbit was present; the rabbit was moved gradually nearer, until the day came when the child was willing to pat the rabbit with one hand and eat with the other. The reconditioning of the fear response of this child was by no means a simple matter. There were periods of lapsing into the fear response. The child had a serious set-back due to an experience which he had when returning from a brief period in an isolation hospital. As he and the nurse were about to step out of the taxicab, upon returning from the hospital, a dog jumped up and startled the nurse. Peter, too, was very much frightened. Upon next meeting the rabbit he evidenced as great a fear as he had shown during the early stages of the experiment, but gradually learned, once more, to be tolerant of the rabbit.

COMMON EMOTIONAL EXPRESSIONS

Fears, Worries, and Anxieties.—Emotional disturbance sometimes seems to delay recovery from illness. The problem of the fearful, worried, or anxious patient is one which confronts every student nurse, almost as soon as she goes on floor duty. We become so accustomed to the anxieties of the ill person and the commonly expressed fears of associates in daily life that we seldom question the source of fears. Many persons believe that fears such as fear of darkness, of snakes, and of fire are hereditary and hence,

inevitable. The question as to which, if any, common fear reactions are hereditary has been studied over a period of years. An early point of view, expressed by Watson, maintained that there are two specific and native stimuli to reactions of fear: one, a sudden harsh noise, and the other, sudden loss of support. Later studies of infants' emotions indicate that a specific reaction of fear is not evident during the first months of a child's life, but that overstimulation of any sort or any sudden violent stimulus is found to be emotionally disturbing. Because emotional reactions in early infancy appear to be undifferentiated, the specific emotion of fear cannot be observed.

Unreadiness in Relation to Fear.—Early studies and later experimental investigations of common reactions to sudden violent stimuli suggest that one factor, the factor of unreadiness, appears to be common to all fear arousing stimuli. When we are confronted by a situation for which we are prepared, we are far less likely to be afraid than when confronted by a situation which causes us to feel helpless. There is apparently a close connection between being afraid and not knowing what to do. Common observation bears out this theory, as the following illustrations suggest. A baby who had been brought up in an orphanage, and whose sheltered experience had been such as to make it most unlikely that he could have learned to fear a false face, was greatly disturbed when one of the attendants in the orphanage put on a Halloween mask. It is possible that the baby's fear reaction is closely related to his unreadiness to respond to something which is so strange that he does not know how to respond. A runabout child who was accustomed to finding her father in a certain chair, appeared to be frightened when she found a strange man seated in her father's chair.⁹

Reported Fears.—In the reported fears of children we can find much material which contributes to an understanding of fear reactions at any level. In a study of fears reported by about 400 children between the ages of five and twelve, some common fears and some interesting age differences were discovered.¹⁰ Some significant results are shown in Table VII. The seven types of fears constituted 85.5 per cent of all fears reported. Fear of the supernatural and of mysterious aspects of life was reported most often. The nurse should be especially interested in this, because there is so much that happens in a hospital that is veiled in mystery as far as many patients are concerned. The increase in fear of bodily injury should also be of unusual interest to the nurse. The older child's greater concern about being alone and in the dark is also suggestive to the nurse.

Guidance of Fears, Worries, and Anxieties.—The responsibility of the nurse in alleviating and preventing fears of patients is self-evident. At this point, however, a word of caution may be indicated. There is no rule

of thumb method of preventing or curing fears. It does not help an intelligent adult to be treated as one would treat a young child. The procedure which proves satisfactory in one instance may be far from helpful in other instances. One worried patient may be satisfied by an evasive reply on the part of a nurse, while, in other instances, evasion does little more than add to a patient's fears. As far as we can judge from reported studies of the correction of fears and from a knowledge of what is involved in unlearning a fear, *personal relationships* are of supreme importance.

TABLE VII.—SEVEN FEARS OFTEN REPORTED BY CHILDREN BETWEEN THE AGES OF FIVE AND TWELVE

Nature of Fear	Per cent of all children reporting	Per cent of children reporting at different ages			
		5-6	7-8	9-10	11-12
Supernatural events and beings, mystery	21.1	20.2	26.0	18.0	20.2
Animals	17.8	27.3	22.0	11.0	11.1
The dark, being alone, strange sights, deformities	14.1	11.1	11.0	14.0	20.2
Bodily injury and physical danger	9.6	5.1	4.0	14.0	15.2
Nightmares and apparitions	8.8	6.1	15.0	8.0	6.1
Bad people, robbers, etc.	7.3	12.1	6.0	6.0	5.1
Frightening gestures, noises, tales	6.8	5.1	7.0	10.0	5.1

Adapted from Jersild, Arthur T., Markey, Frances V. and Jersild, Catherine L. *Fears, Dreams, Wishes, Daydreams, Likes, Dislikes, Pleasant and Unpleasant Memories*, New York: Teachers College, Columbia University, Bureau of Publications, Child Development Monograph, No. 12, 1933.

Helping Children.—The happiness and the welfare of most children depend primarily upon a limited number of persons. In the case of the baby there is usually only one person, his mother, upon whom he is dependent for physical care and companionship. Almost any child upon entering the hospital is in great need of some few persons upon whom he can always depend. In spite of the fact that a student nurse is sometimes cautioned to be impersonal in her attitude toward children, she must often assume major responsibility in making a child feel secure in the new situation. Living as she does in a situation in which *emergency* keynotes many of her activities, the student nurse sometimes overlooks the fact that children are not as ready as she to adopt an emergency viewpoint.

Modern educators are beginning to realize that children should be safeguarded as far as possible from too sudden breaks in their routines. In one of the leading nursery schools of the country parents are required to spend a week in or near the nursery school. They are counseled to sit in the room where their children can have easy access to them. When the mother first leaves her child, she leaves for only short intervals. Thus the child is gradually inducted into the new situation and is gradually accustomed to separation from his mother. This procedure is based upon a theory which is radically different from that held by educators of an older day, who advised parents to leave their children as quickly as possible, and in case the child were homesick "to let him cry it out." A nurse who is interested in helping children to avoid emotional crises such as often occur when a child first enters the hospital, cannot copy the procedure of the modern educator completely, but she can do much to create in the child a feeling of confidence in her, while the mother is still present.

Having established a relationship of confidence between herself and the child, the next step is to help the child to overcome his threatened fear by showing him what he can do about it. Doctors and nurses frequently ask a child to hold something which will be needed in the course of an examination, or in some similar way make him a participant in whatever they may be doing for him. The child who went into the hospital for tonsillectomy, expecting an ice-cream party, might have been spared much emotional stress if she had known in advance where she was to go and just what she was to do when she entered the hospital. The importance of knowing what to do as a preventive or cure of fear is illustrated in procedures in the home which have often proved satisfactory in curing children who were afraid of the dark. A bedside light which the child can turn on without help, a flashlight, or other means of dispelling darkness at his disposal have proved to be excellent correctives. The nurse cannot adopt all such home procedures in the hospital, but she can discover many ways in which she can help a fearful child to help himself.

Helping Adult Patients.—Adults, as well as children, often suffer from a feeling of insecurity when they find themselves in situations to which they are unaccustomed. Ignorant persons sometimes entertain ridiculous beliefs about the hospital. Even intelligent and informed adults may be needlessly worried, because they do not know what to expect in the way of treatment. The practice of maintaining a discreet silence is not always the practice which is most reassuring to an ill person. The nurse needs to adapt her procedure to the individual. In many instances a straightforward statement of what may be expected is much more helpful than remonstrance or evasion.

Any procedure which makes a patient believe that his nurse is a sincere, straightforward, and dependable person is likely to prove effective in allaying fears and preventing needless worries and anxieties.

Anger and Irritability.—The nurse is, perhaps, less often perplexed by violent outbursts of anger than she is by irritability. Anger, like fear, does not appear as a differentiated emotion in early infancy, although its manifestations are easily recognized after the first six months of life. In his early study of emotions, Watson experimented with infants, recording what he interpreted as inherited anger responses.⁶ He noted that an infant whose bodily activity is restricted becomes red in the face and tense, and that he struggles as if to throw off the restraint. If the infant's arms are held down he struggles and kicks; if his ankles are held, he slashes the air with his arms. Interruption of activity seems to be provocative of an emotional response at any age. The slashing and kicking movements made by the infant in response to sudden restraint undoubtedly indicate that he is emotionally disturbed, whether the disturbance is to be classified as anger or as a more general reaction.

Frustration and Anger.—Restraints which bring about emotional responses are not necessarily physical restrictions. When a person is blocked in something that he has set out to do, he may react to interference with his purposes in much the same way that he reacts to physical restraint. Studies of anger provoking situations among children and adults suggest that psychological interference with self-esteem may cause an outburst of anger. In one situation, a school principal kept a record of playground fights and their causes. Her notes bear out the supposition that interference is a common stimulus to anger, as the following illustration indicates. Two fourteen-year-old boys fought violently because the one boy had ridiculed the other in the presence of a girl. A first grade child announced to an older child that he could "do" him and immediately found himself in the midst of a strenuous fight. One child attacked another because he had omitted him in passing papers. Illustrations such as these could be multiplied indefinitely, but these few will suffice to suggest the role of interference of any sort in arousing anger.

Temper Tantrums.—It is a common practice to regard temper tantrums as an attention getting device. It would seem to be much more constructive, from a guidance standpoint, to regard them as an evidence of unendurable frustrations. We have but to observe the behavior of certain motorists whose progress is impeded by a slow-moving car, to recognize the fact that temper outbursts are not necessarily related to desire to have attention. We can often observe the phenomenon upon the part of a passing driver who has no

audience at all. It is true that some so-called temper-tantrums are sometimes staged by children as a means of controlling adults, but more often than not, an outburst of real anger indicates that the child or adult is intolerably frustrated, and that he does not need ulterior motives for his temper outburst, other than the release of tension. The irritable patient is like an angry one in his reaction against restriction. A person who can move about freely, carrying out his purposes, is much less likely to be irritable than one whose purposes are thwarted.

Guidance of Anger and Irritability.—In spite of the fact that self-control is a virtue which practically everyone has learned to esteem highly, one cannot correct a tendency to irritability and temper outbursts through self-control alone. The human organism is so constructed that release from tension can best be found through vigorous expression of some sort. The problem of the nurse in guiding angry behavior appears to be twofold: *first*, she must help the disturbed person to find an acceptable outlet, and *second*, she must help him feel less disturbed when thwarted.

Guidance of Anger in Childhood.—In the case of a child who is given to outbursts of anger or is negativistic in his reactions to the nurse, it is safe to assume that there is something wrong with the child's attitude toward adults in general. A well-adjusted child apparently believes that adults are with him in contrast with the angry or belligerent child who apparently believes that adults are against him. One of the first tasks of the nurse is to establish friendly, cooperative relationships with irritable patients. This is especially necessary in the case of children. The importance of establishing the right kind of relationships is illustrated in the following story.

A five-year-old girl who had frequent temper tantrums was told by an adult whom she liked and respected that one tantrum a day was enough for any five-year-old girl, and that she was going to ask her to limit her temper outbursts to one a day. Whenever the child showed signs of becoming angry at some minor frustration, the adult asked her to stop a minute before having the tantrum to make sure that this was the best occasion for her to have it. Obviously the child could not stop and consider whether or not she might want to have a temper tantrum later, more than she wanted it at the time, without losing her inclination to have a temper outburst.

It is often helpful to use what one educator calls a "predicament," or joint-problem procedure. The procedure is to recognize that the child has a problem and to let him know that you appreciate the fact that he is in a predicament and that you would like to help him to find a solution to his problem. This, of course, is applicable when a temper outburst threatens rather than while it is actually in progress.

Guidance of Angry or Irritable Adults.—In the case of an adult patient who is angry, irritable, or antagonistic, an outlet through the expenditure of physical energy is often not possible. In many such instances the logical outlet is through “talking it out.” The nurse who is willing to play the role of the sympathetic listener can sometimes be of immeasurable help to a disturbed and irritated patient. Knowing that he must not keep his emotions bottled up, the patient is less likely to become agitated at minor irritations. Once more, it appears that the solution to a patient’s emotional problem is by way of sincere and friendly nurse-patient relationships.

Jealous Behavior and Guidance.—Jealous behavior, like anger and irritability, appears to be a response to being thwarted. In the case of jealousy, however, it is not so much activity, plans, and purposes which are thwarted as it is self-esteem. Unlike anger, which usually manifests itself in a sudden outburst which often serves to clear the air, jealousy is a prolonged mood. It is always directed toward some one person or a few persons who in some way interfere with a sense of security. When jealousy occurs in the hospital, it is often a symptom of insecurity and an indication that the patient is in need of friendly personal contacts.

When a new baby arrives in the family, the next older child is sometimes jealous of the new arrival. Jealousy is not necessarily an indication that a child has been excessively pampered. If the coming of the new baby brings about sudden and drastic changes in a child’s way of living, he sometimes becomes jealous even though he has been wisely loved. Security and a feeling of worthwhileness are among the best preventives of jealousy. Wise parents prepare the child for the coming infant and make it possible for him to anticipate the baby’s arrival with pleasure.

GENERAL EMOTIONALITY

Under ordinary conditions, a person who is angry, excessively worried, anxious, or in some other way emotionally upset, finds a release from tension through strenuous activity. The expectant father who paces the floor while awaiting a report from the delivery room does not just happen to pace up and down; he does so because action is imperative. The student nurse can no doubt recall her own response to the stress of unusually acute emotions. Occasionally a highly pleasurable experience may be emotionally disturbing. The person who is overjoyed, like one who is angry, frightened, or worried, finds it practically impossible to relax without first “working off steam” in some way.

A person who is ill or physically handicapped is unable to obtain re-

lease from tensions through physical exertion. It is no doubt because of this inability to work off tensions through vigorous activity that emotional problems are often exaggerated in illness or injury. A patient may worry and fret or become irritable over minor problems, and his disturbance may be prolonged because he has no means of solving his problems. The alleviation and prevention of emotional stress is as much a part of the nurse's task as the easing and prevention of unnecessary pain.

Differences between Children and Adults.—There are a few characteristic differences between emotional reactions of children and those of adults. An adult is capable of many and mixed emotions. The responses of the infant appear to be undifferentiated; he is either excited or calm, placid or aroused, disturbed or peaceful. The baby and, as a rule, the young child, does not try to disguise or conceal his emotional disturbance. The adult may *seethe and boil inside* while attempting to appear calm and untroubled. Children are more easily aroused than adults are and their disturbance is more likely than that of an older person to be out of proportion to the provocation.

Individual Differences in Emotionality.—During her early contact with patients in the hospital, with her classmates, and with members of the hospital staff, the student cannot fail to be impressed by differences to be noted in emotional behavior. Some persons are easily startled, while others appear to be less susceptible to environmental stimuli. Some are more *even-tempered* than others. Some appear to be quiet, as a rule, while others are generally *restless* and given to an unusual amount of activity. Differences such as these are characteristic of young children as well as adults.

Whether or not such differences in emotionality are due to hereditary factors is a question which cannot, as yet, be answered. Emotionality is no doubt related in some way to the functioning of the endocrine glands and is probably hereditary to the extent that characteristics of gland behavior may be hereditary. Parents frequently comment upon the differences in the emotional reactions of their children in infancy. Some babies are much more placid than others. These placid babies often grow into *even-tempered* children and *easy-going* adults. Some babies are disturbed by the slightest noise and appear to be unusually *sensitive*. Children who are *irritable* and *high-strung*, and adults who are given to violent and abrupt shifts in emotions, often have a history of nervous irritability in babyhood and childhood.

Health is a factor in emotional adjustment. Almost everyone, in the light of personal experience, recognizes this fact. A person who feels well and is free from the irritations of physical distress, finds it much easier to refrain from emotional excesses than does an ill person. Habit also is

always a factor. Among normal persons, that is, among those who are able to adjust reasonably well to life, there is probably no highly emotional person, whether a child or adult, whose emotional reactions could not be tempered somewhat.

Whatever the causes of differences in emotionality may be, whether heredity is a factor or not, adults and children differ in the facility with which they are thrown off-balance emotionally. There seems to be no doubt of the fact that some persons are much more readily frustrated than others, that some are relatively slow or relatively quick to anger, that some are much more easily excited than others. One common way to adjust to such differences is to moralize about the person who is easily disturbed and to accuse him of behaving like a spoiled child. Another way and one which appears to be psychologically sound is to vary one's own behavior so as to make highly emotional responses unlikely. The nurse soon learns that, in caring for children or for ill persons, she should do everything that she can to maintain an atmosphere which is as calm and undisturbed as possible. The same policy is usually desirable in everyday life.

SUMMARY

To appreciate what is involved in emotional learnings we must understand the organic basis of stress and strain. A person who is emotionally disturbed is tense. He is experiencing sensations which are due to changes in his entire organism.

Bodily and emotional well being are not distinct conditions; it is the interaction of so called "physical" and so called "psychological" activities which is of interest to psychologists.

Animal experiments suggest that emotional stress interferes with normal bodily processes such as those involved in digestion.

Outward manifestation of emotional disturbance does not always indicate the extent of internal upheaval. A person may be relatively calm outwardly, while "seething and boiling" inside.

Studies of reactions to motion pictures indicate that emotional disturbance may persist for some time after emotionally arousing stimuli have been removed.

A characteristic way of learning, known as *conditioning*, is significant in explaining many emotional responses. It is probable that neural activity continues after immediate stimulation and that the human organism can respond to very recent as well as to immediate stimuli. It is possible for a response which has been made to one stimulus to become linked with another.

Experimental studies indicate that responses which are normally made to one situation can be elicited by another situation, if the two sets of stimuli have been closely associated in time. Pavlov pioneered in demonstrating the possibility of *conditioning* a reflex.

Watson pioneered in demonstrating the possibility of *conditioning emotional reactions*.

In the reactions of patients to her, the nurse may observe indications of conditioned emotional responses based upon earlier experiences.

It is possible that a single experience in which emotional disturbance is acute, might account for later conditioned reactions. Usually, however, no one isolated situation is likely to have a profound influence upon later emotional responses to related situations.

Many factors enter into emotional conditioning. A person who is already ill-at-ease and tense is more ready to be conditioned unfavorably than is one who is calm. Readiness for an experience quite different from one which proves to be highly disturbing may also predispose a person to emotional conditioning.

Nurses, with the best of intentions, often try to change an emotional response, such as a reaction of fear, by *talking* about it, by *evading* the issue or by *calling attention* to another person who is serene.

Experiments suggest that emotional responses to a certain group of stimuli can best be changed by direct reeducation. If, for example, a person habitually reacts fearfully to a situation he must learn to respond differently to that same situation.

Fears, worries, and anxieties are emotional reactions which sometimes retard recovery from illness. A knowledge of common stimuli to fear is of practical value to the student nurse.

Unreadiness to respond to a certain situation, a condition of helplessness, seems to be one factor which enters into fear reactions under all conditions.

A tendency to fear the mysterious has been reported by children more often than any other fear. Older children, more often than younger ones, appear to be afraid of the dark, being alone, strange sights and deformities. Older children, more than younger, also seem to be afraid of bodily injury and physical danger.

In helping adults, as well as children, the *relationship* which the nurse establishes with her patients seems to be of paramount importance. The activities of the nurse are often keyed to emergencies. Patients are not so ready to adopt an emergency viewpoint.

If the nurse can encourage attitudes of confidence in her, she can do

much to alleviate unnecessary fears, worries and anxieties. Any procedure which makes the patient believe that his nurse is a sincere, straightforward and dependable person is likely to prove effective in preventing and allaying fears.

Another means of lessening fears and worries is to help the patient to find a solution, whenever possible.

A common reaction to restraint, or frustration, is anger and irritability. When a person is blocked in his motives he may react very much as he does when physically restrained. Interference with *self-esteem* seems to be a common stimulus to angry and irritable responses.

Temper outbursts of adults, as well as children, may be regarded as evidences of a sense of intolerable frustration.

The human organism is so constructed that release from tension may be obtained through vigorous expression. The problem of the nurse, in guiding angry and irritable behavior, is to find ways of providing the patient with an *outlet*. She can also help by trying to discover why he is frustrated.

In the case of any person who is given to outbursts of anger or irritability it is safe to assume that there is something wrong with his attitudes toward his fellows. As in the case of the fearful, worried or anxious patient, the nurse can best help an angry or irritable person by establishing a sincere, friendly nurse-patient relationship.

Jealous behavior, like anger and irritability, appears to be accompanied by a sense of frustration. In the case of jealousy it is motives of *self-esteem* which seem to be thwarted. Anything that the nurse can do to contribute to a belief in personal integrity is likely to make a jealous person more comfortable.

Whatever may be the cause of emotional disturbance, the disturbed person needs an outlet. In normal life an outlet may be obtained through vigorous physical activity. In caring for an ill person who is emotionally tense, the nurse needs to exercise her ingenuity in providing outlets. A safe procedure is to try to prevent emotional stress; this seems to be as much a part of the nurse's task as the easing and prevention of pain.

Children and adults differ in their expressions of emotional tension. Children are more spontaneous and less inclined to try to conceal their disturbance.

Individual differences in general emotionality are to be observed in the hospital and in all aspects of daily living. Some persons are more even-tempered than others; some are quiet while others are restless; some are more sensitive, irritable, or high strung than others; differences such as these are differences in temperament. Such differences are due, partially, to hereditary

factors and, of course, to the many environments to which everyone must react.

Whatever the causes of differences may be, it is desirable to recognize the fact that some persons are thrown off balance more easily than are others.

In her professional life, the nurse has many opportunities to establish an atmosphere in which tensions are reduced to a minimum. In her personal adjustments, she can, no doubt, discover that whatever is helpful in the hospital, helps the nurse herself, as well as her associates, on the outside.

SUGGESTED ACTIVITIES

1. Discussion problems.

(1) Why do we say that physiological and psychological factors cannot be separated but must be considered as they interact? Try to separate *mainly* physiological and *mainly* psychological factors in the following situations and discuss their interaction.

A child habitually regurgitated almost immediately after eating food which the nurse had urged him to take. The nurse watched the child closely, upon one occasion, and noticed that he put several spoonfuls of food into his mouth without swallowing. Finally, when his mouth was very full, muscular spasms characteristic of regurgitation followed.

A three-year-old child who had left home early in the morning, to go with his mother to a clinic, arrived shortly before noon. He objected to being undressed, and continued his protests during his physical examination. He cried and repeatedly said, "If you don't stop, I'll be sick." In due time he made good his threat. It developed that he had been so excited that he had not been able to eat his breakfast. In the course of the morning he had eaten a cookie. His mother showed her anxiety when he threatened to be sick but the physician who was examining the child said, "It's fortunate that he is able to vomit."

A preschool child holds his breath whenever he is badly hurt.

(2) Consider the child who learned to fear strange persons, elevators and everything suggestive of the hospital. Can you contribute further illustrations of unfavorable emotional conditioning due to medical treatment or hospital experiences?

(3) Consider situations in which you might help a person to help himself, as a child who fears the dark is helped when he is given a flashlight.

(4) Discuss ways in which you "work off steam" when you are emotionally disturbed. What are some of the ways in which you might help

patients to find release from emotional tensions without getting out of bed?

(5) Recall an occasion upon which you have expressed anger. Was it an audience situation? Did you stage your anger outburst for the sake of its effect upon another person? Do children *plan* temper tantrums?

(6) Adolescents are sometimes disturbed because they are treated as adults on the outside although they continue to be children at home. Compare experiences in which happy solutions to this common problem have been found.

2. Notebook suggestion. Try to trace a "conditioned" emotional reaction to its source.

SUGGESTED READING

Dockeray, Floyd C. *Psychology*, New York: Prentice-Hall, Inc., 1942.

Read Chapters VIII and IX. Experimental studies of emotion are cited; emotion is considered in relation to motivation and health; unpleasant emotions are discussed.

Morgan, Clifford T. *Physiological Psychology*, New York: McGraw-Hill Book Co., Inc., 1943.

Read Chapter XVII for a consideration of theories and the neural basis of emotion.

Valentine, Willard L. *Experimental Foundations of General Psychology*, New York: Farrar and Rinehart, 1941.

Chapter XII reports experimental studies of children's emotional responses. Chapter XIII reports studies of emotion in adults.

Young, Paul Thomas. *Emotion in Man and Animal*, New York: John Wiley and Sons, Inc., 1943.

Read Chapter I for a general discussion of emotion, including emotion and adjustment, identification of emotions and criteria of emotion.

Zachry, Caroline B., in cooperation with Lighty, Margaret. *Emotion and Conduct in Adolescence*, New York: D. Appleton-Century Co., 1940.

Changing relationships with adults are discussed in Chapter IX.

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² DYSINGER, W. S., and RUCHMICH, C. A. *The Emotional Responses of Children to Motion Picture Situations*, New York: The Macmillan Co., 1933, Ch. 7.

³ RENSHAW, S., MILLER, F. L., and MARQUIS, D. P. "Children Sleep," In Charters, W. W. *Motion Pictures and Youth*, New York: The Macmillan Co., 1933, 31-35.

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- ⁵ PAVLOV, I. P. *Conditioned Reflexes*, (trans. by G. V. Anrep), London: Oxford University Press, 1927.
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- ¹⁰ JERSILD, Arthur T., MARKEY, Frances V., and JERSILD, Catherine L. "Children's Fears, Dreams, Wishes, Daydreams, Likes, Dislikes, Pleasant and Unpleasant Memories," *Child Developm. Monogr.*, No. 12, Teachers College Bureau of Publications, 1933.

ANSWERS TO TEST OF BELIEFS, FOLLOWING CHAPTER I

1, true; 2, true; 3, false; 4, true; 5, true; 6, false; 7, false; 8, false; 9, false; 10, false; 11, false; 12, false; 13, false; 14, true; 15, true, 16, false; 17, false; 18, true.

Chapter XI

REACTIONS TO STRAIN AND FRUSTRATION

The student nurse, in the course of the first few weeks of her training, has many opportunities to appreciate what is meant by *making adjustments*. She finds it necessary to adapt, or adjust, her behavior in order to fit into a new way of living. She makes drastic revisions of some of her habitual ways of reacting to associates. She adopts new standards and defines new goals for herself. It is a matter of common observation that some students seem to be able to make needed adjustment without undue disturbance while others appear to find the going hard. Even though not every nurse has marked difficulty in adjusting to all the changes that are involved in launching herself upon a nursing career, the fact remains that every student nurse makes many adjustments. The person does not live who is not continuously adapting his behavior to the social world in which he lives. Even in earliest days, man had to adjust to the physical world, to changes in the weather, and to physical hazards of many kinds. Man has always made adjustments and always will make them. The process of adjusting involves a certain amount of stress and strain, sometimes much and sometimes relatively little.

THE NATURE OF STRESS AND STRAIN

In an earlier chapter we noted a relation between organic tension and a tendency to be restless and ill-at-ease. We noted further that a state of organic tension, due to the operation of a basic physiological drive, appears to persist until the need of the organism is satisfied. We have suggested that any strong, learned motive probably involves a similar state of tension which also persists until the motivated person attains a certain goal. We have also observed the importance of organic changes and of actual bodily tension in relation to behavior which we label *emotional*.

A certain amount of mild and temporary tension is inevitable in connection with any adjustment that one may make. A person who habitually adjusts well is, conceivably, one who experiences relatively little tension in the course of adjusting; while a person who habitually adjusts poorly, experiences tension to a marked degree.

Nature of Frustration.—A person who becomes tense when thwarted or blocked may be said to be *frustrated*. He feels frustrated because he does not know what to do; he has no ready way of reacting to thwarting situations. Frustration, because it involves tension, is not a comfortable condition, and so the frustrated person, not knowing just what to do, tends to try out all sorts of ways to rid himself of the tension.

There are, of course, varying degrees of frustration. A person whose basic emotional needs, such as the need to be loved or the need to esteem oneself, are continuously thwarted, is likely to be frustrated most of the time, while a person who is only temporarily blocked in carrying out various purposes is likely to manifest a brief and often mild degree of passing frustration. In considering evidences of stress and strain we are especially interested in the reaction of persons who appear to be more or less habitually frustrated.

Evidences of Tension.—Symptoms of emotional tension, due to the blocking of impulses, are not always recognized. It is possible that an apathetic and uncomplaining patient may be suffering from tensions that are more severe than those of one who is complaining and exacting. A child who is *shut-in* and given to excessive daydreaming may be much more severely maladjusted than a child who has frequent tantrums. In the case of the exacting and complaining patient or the child who is given to outbursts of temper, the temporary maladjustment is readily recognized, but in the case of the silent, uncomplaining patient and the shut-in, daydreaming child, prolonged maladjustment with accompanying emotional tension is often overlooked.

TABLE VIII.—DIFFERING JUDGMENTS AS TO THE SERIOUSNESS OF CERTAIN EVIDENCES OF MALADJUSTMENT

Behavior Problem	Ranking by Child Psy- chologists	Ranking by Teachers	Ranking by Parents	Ranking by Children
Depression	1	13	20	20
Unsociableness	2	4	12	18
Fearfulness	3	19	19	21
Suspiciousness	4	21	16	13
Cruelty	5	16	4	5
Sensitiveness	6	9	21	19
Shyness	7	8	22	22
Dreaminess	8	15	23	17
Resentfulness	9	5	13	14
Bullying	10	14	8	7

Adapted from Thompson, C. E. "The Attitudes of Various Groups Toward Behavior Problems of Children," *J. Abn. and Soc. Psychol.*, 1940, 35, 120-125.

The inability of many persons to recognize the more subtle evidences of serious maladjustment is suggested in Table VIII in which the judgments of psychologists, as to the seriousness of certain problems, are compared with the judgments of children, parents, and teachers.

The person who continuously indulges in mannerisms such as twisting or pulling the hair, biting the nails, picking at any part of his face or body, or grimacing is usually recognized as a person whose adjustment is somewhat difficult. Quieter and less abrupt mannerisms such as sucking the thumb or finger are not so universally recognized as symptoms of stress and strain, but they should, no doubt, be included among evidences of tension.

CAUSES OF STRESS AND STRAIN

Environmental Obstacles.—Among common causes of temporary or prolonged frustration are environmental obstacles which may block progress literally as well as figuratively. Many such environmental causes of thwarting are so obvious as to need no discussion, but one or two may be cited for purposes of illustration. The farmer who loses his crop because of a devastating period of drought or the fruit grower whose products are blighted by frost is obviously very much blocked, but, as a rule, only temporarily frustrated. In either case he is likely to work actively to make up for his loss and, in his activity, he very often works off his tension. To cite a further illustration, we find an occasional man or woman who is so irked and annoyed by the limitation of rationing as to appear to be in a state of perpetual tension. An important point for the student of psychology to bear in mind, in connection with a discussion of tension, is that moralizing does not contribute to understanding. The petty citizen who is unduly frustrated because of rationing, while not justified in his behavior from a moralistic point of view, is nevertheless tense and in need of relief from tension.

Economic Adjustments.—The extent to which economic factors restrict many persons and make it impossible for them to gratify many of their wants is also obvious. Poverty, in and of itself, however, is not universally frustrating. There are some persons who accept abject poverty with a regrettable docility. They do not feel frustrated because they have become habituated to their impoverishment. On the other hand, persons with more than an adequate income often seem to be greatly frustrated because they are denied some of the advantages of still higher income. Whether or not economic deprivation, either actual or relative, causes a person to be frustrated, apparently depends upon what the person wants. Lack of money is very often a factor contributing to delinquency. Studies suggest, however,

that it is not so much the actual money lack which brings about delinquency as the relation between a person's wants and his ability to gratify his wants. There are, of course, countless instances in which poverty contributes indirectly to frustration, as in the case of a person who lives "on the wrong side of the tracks" and, therefore, suffers numerous social frustrations.

Restrictions and Taboos.—Restrictions and prohibitions commonly bring about a state of tension upon the part of the person who is limited by them. In an earlier chapter we discussed some of the needless restrictions which are placed upon children, often causing them to be unnecessarily frustrated. The child who indulges in a temper tantrum is, as a rule, frustrated beyond his ability to tolerate a situation. Again the student might be tempted to moralize regarding the justification of the tantrum child's frustration. Moralizing does not help the situation; the fact remains that the child is tense and intolerably frustrated. In adult life, we occasionally see the person whom we label a "poor sport" because he is so annoyed and irritated if he loses. Once more we should remind ourselves that such a person is frustrated and tense, and that his state of tension is not a healthy one regardless of what we may think about the justification of his behavior.

Group Prejudices.—In our discussion of social learnings, we mentioned the common tendency of frustrated persons to find a scapegoat. We were, at that time, especially interested in considering why it is that such a tendency is common. At this point, we might profitably consider the plight of the scapegoat himself. Persons who are the objects of group prejudice cannot fail to experience stress, because they are inevitably blocked in many ways.

Physical Handicaps.—A person who is disfigured or deformed, lacking in physical stamina, or otherwise handicapped physically, is inevitably restricted in his social activities. Sometimes a physically handicapped person appears to suffer from a *feeling of inferiority*. He does not necessarily react to his handicap by feeling inferior, however. It is true that he is more likely than a pleasing, rugged person, to feel intolerably frustrated, but he is sometimes able to adjust to his limitations with a remarkable degree of serenity. Frustration due to physical shortcomings, like frustration due to economic restrictions, seems to depend upon the relation between what a person wants and what he can have.

Conflict of Motives.—Maladjustment is commonly due to a conflict of some kind. In all the causes of maladjustment that have been mentioned, conflict of motives has been implied. Frustration appears to be related closely to individual wants and needs. Habits, too, may be in conflict, but we cannot separate habits from motives, as the following illustrations suggest. A student nurse who is the child of foreign-born parents usually has many habits of

behaving in such a way as to contribute to her parents' happiness. She not only has habits of making them happy, but she *likes* to do so, and so is *motivated* to contribute to their happiness. She has acquired certain loyalties to old world traditions which her parents cherish. Coming into the training school, and becoming acquainted with other students whose family backgrounds and traditions are unlike hers, she sometimes becomes confused in her motives. Like every other normal young person she is motivated to be like her friends, and so she would like to adopt many of their standards. She also wants to be loyal to the traditions of her parents. The new-world standards of her friends and the old-world traditions of her parents are not readily reconciled, and, as a result, she is likely to experience frustration until she can make an adjustment to the conflict. An adult patient, who is in the habit of assuming responsibility and showing initiative in organizing procedures in his business, may, when he becomes ill, be motivated to continue his habits as executive. He may want to adjust to the hospital routine also. Since he cannot continue his executive habits and adjust to the routine at the same time, he must revise his habits and reconcile his conflicting motives. Until he can do so he is likely to experience a certain amount of frustration. A child, in a hospital ward, often experiences conflict of habits and motives because he cannot have as much personal attention and affectionate contact as he has been in the habit of receiving from his family.

The student is perhaps wondering what this discussion of tension and frustration means to her, in terms of her day by day adjustments and her guidance of others. Should she conclude that she must, as far as possible, avoid all situations which block her motives or the motives of her patients? As far as her personal growth is concerned, she will need to do everything that she can to make necessary blocking tolerable. A well adjusted person is one who has learned to accept necessary restrictions, at times, without becoming emotionally tense. In her guidance of her patients, she should safeguard them from all unnecessary causes of frustration and should, as in her own case, try to make necessary restrictions as tolerable as possible.

ADJUSTMENT MECHANISMS IN EVERYDAY LIFE

The ways in which different persons react when blocked in their motives are various. To illustrate some of the ways in which one might react to a frustrating situation, consider the alternatives of a person who is literally blocked by a physical obstacle in his path. He can, if the obstacle is not beyond his control, destroy it or remove it by aggressive and direct attack.

If the obstacle is too big for him, he can frankly admit that he cannot remove it and can go around it. Either of these alternatives would seem to be acceptable and indicative of a good, forthright solution of his problem. If, however, he had, in the course of long experience with obstacles that were beyond his control, learned to regard himself as a generally inadequate person, he might be much less direct in his behavior. He might make a variety of *defensive* reactions such as blustering and boasting of his strength or, perhaps, blaming some nearby person for putting the obstacle in his path. He might make *withdrawing* reactions, moving back from the obstruction pretending that it is not there, or he might walk around it, pretending that he does not see it.

Defensive Reactions.—Many persons, in everyday life, seem to find it difficult to react frankly and directly when confronted by frustrating situations, but, because frustration involves tension, they must do something. Not uncommonly they hit upon defensive reactions and discover that frustration becomes somewhat more tolerable if they can assume attitudes of self-defense. Almost anyone might, once in a while, when blocked, behave defensively instead of directly, but a person who habitually reacts in this way gives evidence of an unusual amount of stress and strain.

Compensation.—There are several mechanisms (learned ways of adjusting), which suggest a defensive attitude. One of these is a compensatory type of reaction. A very small person, for example, may try to compensate for his short stature by blustering or being very autocratic. A plain woman may wear startling clothes in an attempt to compensate for a lack of physical beauty. A boy who is unable to participate in athletics may torment and bully smaller children to offset his inability to compete with his peers. An invalid sometimes becomes exacting and violent in his demands, because he knows no other way of demonstrating his power. In much compensating behavior there is a suggestion of maladjustment which may be either mild or extreme. It is possible, however, for compensation to indicate very good adjustment, if it is not accompanied by an attitude of being on the defensive.

Egocentrism.—Sometimes a person who is on the defensive seems bent upon attracting attention to himself. Children sometimes make silly faces and gesticulate foolishly, or walk stiff-legged, or manage in other ways to "show-off." In adult life more subtle tactics are used. But in any case an exaggerated tendency to attract attention to oneself suggests a certain amount of frustration and maladjustment.

Projection.—A tendency to blame an object or another person for one's own shortcomings is not at all uncommon. In almost any group of students

some may be found who *project* responsibility instead of assuming it themselves. A student nurse, for example, performing blunderingly in the laboratory, might attribute her lack of skill to a presumably dull instrument or to faulty equipment. Another, failing to make a satisfactory grade on an examination question, may be inclined to blame the teacher, suggesting that the question has not been well chosen. Students frequently complain that they cannot study because their associates make so much noise. The student nurse does not need to look far to find other illustrations of simple projection as indulged in by normal persons in everyday life. Almost anyone, upon occasion, is likely to make use of this easy mechanism of self-defense; in so doing he does not necessarily indicate any marked degree of maladjustment. It is when such reactions are more or less habitual, that the tendency to shift responsibility to other persons or things indicates an unusual sense of frustration.

Capitalization.—A tendency to make the most of a handicap such as illness is not uncommon. It is entirely normal for a young child to display his cuts and bruises with some degree of satisfaction. Less desirable, from an adjustive standpoint, but still not unusual, is the tendency which is suggested by the familiar phrase, “speaking of operations.” In the hospital the nurse occasionally comes upon a patient who does not recover as soon as might be expected. He makes the most of his illness and sometimes attempts to prolong it because in his case illness is more satisfying than the frustrations involved in everyday life. As in the case of all other defensive adjustments, it is when such a tendency is habitual that it is to be regarded as an evidence of maladjustment.

Withdrawing Behavior.—Instead of developing attitudes of self-defense, when adjustments are hard, some persons adjust by running away from frustrating situations. In many instances their difficulties are not recognized by their associates, because they do not necessarily appear to be thwarted as much as they actually are.

Seclusiveness and Timidity.—One way of withdrawing from situations that are too hard is to become seclusive. If one avoids contact with other persons, difficulties are not so likely to arise. The nurse sometimes regards a seclusive patient as an *easy patient* because he does not “talk too much”, and because he accepts routine care uncomplainingly. For similar reasons a nurse may be glad to have, in a ward of convalescent children, one very *good* child who does not get into trouble with his neighbors. It is easy for a busy nurse to overlook the fact that such a child may be aloof from the social world around him, and that he may need an unusual amount and kind of care. Teachers, and parents as well, are often somewhat unmindful of the

difficult adjustments of quiet, unobtrusive, and withdrawn children. (See page 222.)

Many persons, including some members of practically every large group of student nurses, tend to be more or less shy in social situations. It is not easy for a shy person to take part in group discussions or to be singled out for a solo performance. It is obvious that shyness and timidity always indicate a lack of readiness to engage in certain social activities. A timid person is timid because he does not know what to do. Because he does not know what to do, he is self-conscious and unsure of himself. Self-consciousness contributes to his unreadiness to be social, and *vice versa*; factors contributing to his shyness operate in a vicious circle. It is a matter of common observation that a shy person can sometimes forget himself and rise to the occasion as an emergency develops. A student nurse, who is inclined to be shy in classrooms and in other social situations, can forget herself utterly in a period of hospital crisis, and can often prove herself a self-confident and highly efficient nurse. It is clear that there is a marked relationship between knowing what to do and the absence of shyness and timidity.

Regression.—The term *regression* is frequently met in psychoanalytical studies. As used by a psychoanalyst, it means regressing or turning back to infantile ways of behaving. The term is also used less technically in reference to a person who has fallen back upon some earlier habit which is not adequate in the situation. This type of adjustment is illustrated in the behavior of a child in a nursery school. At the age of two-and-one-half, she had learned to perform many little services for herself and had become exceptionally competent for a child of her age. During the summer session, when an unusual number of observers appeared in the nursery school, it was noticed that the child was trying out a new social procedure as she began to appeal for help in a plaintive voice. That the tendency is not characteristic of children alone is evidenced in the behavior of many adults under conditions of everyday living. Some children of mature years like to fall back upon “run-home-and-tell-mother” habits and “I-won’t-play-with-you-if-you-do-that” attitudes. Regressive habits tend to be the habit of the socially and emotionally immature regardless of age.

Identification.—A type of reaction which is suggestive of maladjustment only when indulged in to excess, is the tendency to identify oneself with another person. In normal life, anyone who thoroughly enjoys drama, motion pictures, and fictional narrative identifies himself, to some extent, with certain of the characters portrayed. This is true of all of us. We suffer the woes of the downtrodden; we feel gay, light-hearted, and light-spirited with the adventurer; we are benevolent with the benefactor and share in the intrigues

of the plotter. Whatever is happening to fictional characters in whom we are keenly interested is, for the moment, happening to us. This illustrates a type of identification which adds zest to living and which does not indicate poor adjustment. In many instances, a temporary and beneficial self-forgetfulness is made possible through such identification.

To children and to some adults, identification with the experiences of others is so satisfying that direct and first hand contact with a world of reality appears to be somewhat unnecessary. When this happens, a tendency to be identified with others may become a marked handicap. When the tendency is habitual and when the vicarious experiences are substituted for real-life experiences which would otherwise be possible, the habit is an indication of poor adjustment. The difference between identification tendencies in every-day life and persistent identification with some one important personality which characterizes certain insane persons is first of all a difference in the persistence of identification and secondly a difference in ability to recognize the fact that one is adjusting by identification.

Adjusting by Means of Self-Deception.—Almost anyone who enjoys a little laugh at his own expense can discover, now and then, that he is possessed of some peculiar little quirks which, if exaggerated, would mark him as an abnormal personality. One of these quirks is a tendency to deceive oneself. Certain insane persons practice self-deception to such an extent that they accept the deception as reality, while a normal person, if confronted by the necessity of doing so, is able to recognize the fact that he has been indulging in such a practice. As previously indicated, the difference between the quirks of the average person and those of the pathological are essentially a difference of degree.

Rationalization.—A popular form of self-deception is by *rationalization*. By this expression, we mean attempting to justify one's behavior so that it may appear plausible. A person who makes use of this form of self-deception tends to read into his reactions whatever may make him appear in a good light. It is a tendency of this kind which sometimes earns for a person the nickname of Alibi Annie. The use of such nicknames suggests that whatever deceit is practiced is upon the person himself rather than upon his associates. Occasionally the self-deception is practiced in advance of the act, as in the case of a person who deliberately chooses the less desirable of several alternatives and tries to make himself believe that his choice is the best one. A pet rationalization of students is to postpone work on a difficult assignment in favor of some other less important work which, they persuade themselves, must be done first.

There are two forms of common rationalizations which have been desig-

nated *sour grapes* and *sweet lemon* mechanisms. A person who falls back upon the sour grapes mechanism behaves very much as did the fox in the old fable of *The Fox and The Grapes*. The fox, it may be recalled, after gazing longingly at some grapes that were beyond his reach, announced that he really did not want the grapes because they were sour. The parallel between the fox and many persons in normal life who tend to belittle what they really want but cannot have, is so obvious as to need no further illustration.

The *sweet lemon* form of rationalizing is best illustrated by a smug little fictional heroine called *Pollyanna*. According to the Pollyanna philosophy whatever happens is right, and nothing is to be done about it. There is a difference between accepting whatever may come without a struggle, as suggested by those who tell themselves that lemons are sweet, and making the best of a bad situation after every effort has been made to remedy it. To make the best of a bad bargain is an excellent adjustment, but to accept the undesirable and to tell oneself that it is good, making no effort to change the situation, indicates faulty adjustment.

Daydreaming.—Daydreaming is not always an indication of withdrawal from frustrating situations. Great works of art, modern inventions, and the discoveries of science are the results of a constructive type of daydreaming in which the dreamer makes use of his imaginative ability in formulating and in solving problems. A somewhat less creative and a much less useful type of daydreaming is that in which the dreamer withdraws from the world of reality and creates a make-believe world of his own. Hospitals for the insane are filled with daydreamers.

In the first chapter, we referred to stories and myths that have come down to us from past generations. Among the tales that have lived are many in which the central character is portrayed as a person of great prowess who proves his worth to his associates. One reason for the survival of tales of this type is that a desire to be esteemed is universally understood; it is a need which is common to all normal persons. When a basic personal worth motive is persistently thwarted, a good adjustment to social life is extremely difficult. Self-esteem is so essential to emotional health that many persons, failing to earn it through direct and forthright activities, turn to daydreaming. In the world of fantasy, unrestricted by grim reality, there is no limitation to the importance of the role which the dreamer may create for himself. The unreasonableness of a role which a person may adopt, and his failure to recognize it as an imagined rather than a real role, marks the insane person as distinct from the normal.

Among the insane, such *conquering hero* roles are called *delusions of grandeur*. In its simplest form in normal everyday life, a conquering hero

type of daydream is fleeting and not an indication of withdrawal from the world of reality. A small boy puts on his father's hat and becomes a man. As he struts about he is for the moment not a small boy but a big man. The little girl stepping into her mother's shoes literally, steps into them figuratively, as she tries out the airs and mannerisms of an adult. The *conquering hero* daydreams of the adolescent are in some respects similar to the dramatic play of young children and do not necessarily indicate withdrawal from reality except in a mild degree. The adolescent youth who enacts a "man-about-town" role and the girl who mimics the behavior of her favorite movie star are daydreaming, but, as a rule, they remain close enough to reality to cause their elders little concern, although their daydreams tend to be more prolonged than those of the young child. That they can abandon the role with facility is suggested by the behavior of a sixteen-year-old boy. The youth had gone so far in his dreams of becoming a mature and sophisticated man that he occasionally carried a cane. Walking along the street, and very obviously playing a part, he came to a fire hydrant; his manly airs were quickly forgotten as he leaped over the hydrant and then continued on his way as before. The incident is somewhat symbolic of the conquering hero daydreams of many adolescents, in that they seem to be able to leap back and forth between reality and make-believe, with the greatest of ease.

When a person makes use of a daydream in order *to escape from frustration in real life*, a daydreaming tendency becomes an indication of poor adjustment. One who is habitually boastful and who, in recounting his experiences, is inclined to enlarge upon his own accomplishments, illustrates a tendency which is not altogether wholesome. As in the case of all other *mechanisms of adjustment*, being important by way of a daydream is less desirable than achieving importance by direct attack.

Another technic for daydreaming oneself out of a difficulty is by way of the *suffering hero* daydream. The suffering hero (or heroine) is, according to his own evaluation, always misunderstood and never treated fairly. He is a person whose nobility of character goes unrecognized. The world is against him. He (or she) is to be found in many families. As a child he daydreams about the anguish of his sorrowing family when it is discovered that he has died of a broken heart because of ill treatment. As an adult he is the *martyred* member of the family who sacrifices himself for the sake of the others and makes very sure that everyone recognizes his martyrdom. When the tendency is carried to an extreme the afflicted person has delusions of persecution and believes that he is the victim of a persistent conspiracy against him.

Logic Tight Compartments.—An interesting way of evading a discomfort that would be inevitable if one were to admit his inconsistencies in

behavior is to make no attempt whatsoever to reconcile conflicting habits or standards. A person who falls back upon this adjustment mechanism does not *let his left hand know what his right hand is doing*. He sometimes has a moral code which he uses on Sundays only to forget it on other days in the week. Some persons who adjust in this way are meek and uncomplaining while on the job, but tyrannical when at home. Some who adjust in this way believe wholeheartedly in the enforcement of certain laws but believe that other laws are made to be broken. The refusal to recognize inconsistencies in habits, attitudes, and ideals, and the failure to integrate behavior is one evidence of faulty adjustment. The greater the number of logic type compartments one maintains in his thinking, the poorer will his adjustment be; good adjustment is essentially a matter of *integrating* behavior.

Repression.—One very non-constructive way of attempting to adjust to frustration is to refuse to admit that a problem exists. A person who attempts to adjust in this way *represses* his emotions. A repressed person (using the term in the popular rather than in the sense in which it is used in psychoanalytical literature) is bottled-up. While attempting to cover up the *evidence* of his inner turmoil, he continues to retain his tensions, because in bottling-up his emotions, he denies himself an outlet for the release of tensions. This type of person is often a difficult patient, because this inner turmoil is not always discovered. With experience, however, the nurse learns to recognize little symptoms of tension, such as drumming with the fingers, picking at the covers, or in other subtle ways evidencing a state of emotional unrest.

PSYCHONEUROSES

When little release from tension is to be found by way of various adjustment mechanisms, and the tension persists, maladjustment may become serious, and neurotic (or psychoneurotic), symptoms may appear. A neurotic person differs from one who is normal mainly in the extent and in the persistence of his maladjustments. A neurotic person is too *nervous* and has too many maladjustments to make it possible for him to get along comfortably in a group. The neurotics are, obviously, poorly adjusted, but they are not insane. If adjustments could be scaled from the best adjustments possible in normal life, to the worst maladjustment possible in insanity, neurotic adjustments would classify some place between the two extremes. The neurotic does not belong in an institution for the insane. Wherever he may be, however, he is in need of more help than is the average person. He does not know how to help himself.

He suffers from nervous disorders, the causes of which are difficult to

trace. He is not always ill when hospitalized in the sense that a person suffering from a specific disease is ill, and yet he is never well.

The ailments of a neurotic person are often both physical and psychological, and it is extremely difficult to separate the two factors. When one is emotionally disturbed the condition of the organism is not the same as when one is calm and placid. Emotional stress is accompanied by a type of bodily activity which tends to interfere with normal, routine, vegetative processes such as digestion. Heightened activity of the endocrine glands in emotion brings about changes in body chemistry. Marked changes have been noted in heart beat, blood pressure, and respiration, under conditions of emotional stress. The physical condition of an emotionally disturbed person is such that he cannot be entirely forgetful of organic reactions. A very neurotic person is emotionally disturbed much of the time, and because of continued organic stress, may become unduly anxious about his physical condition.

Ailment Adjustments.—In the course of her training, the student nurse will meet patients whose ailments do not appear to have a pathological, physical basis. The doctor's examination in some instances shows nothing of a specific pathological nature, as far as the patient's physical condition is concerned. The patient, however, is hospitalized and in need of skillful nursing care. In many instances such a patient "feels miserable." As a matter of fact, a neurotic can be as uncomfortable as some patients whose ailments can be traced more directly to physical causes.

Hysteria.—It is extremely difficult for even an experienced nurse to understand the behavior of a patient whose illness is diagnosed as *hysterical*. The patient may show symptoms of acute physical disorder, despite the fact that no structural difficulty is discovered. It is characteristic of the patient whose ailments are of a hysterical nature that his symptoms are not always consistent. Although his difficulty appears to be localized, the affected areas are not always the same. To the patient, however, his illness is genuine.

His sensory reactions are often not normal. He may complain of loss of feeling in certain parts of his body. On the other hand, such a patient may be hypersensitive to sensory stimuli of various kinds. In extreme instances he may even become blind or deaf.

Hysteria sometimes manifests itself in motor disorders which, in some instances, are so extreme as to cause the patient to lose the use of certain parts of his body. Helpless invalids who have been bedridden for many years because of inability to walk are sometimes persons who have no organic or structural disability.

Persons whose neurosis takes the form of hysteria are always unstable. As a rule they are highly suggestible. They are always persons who have

found frank, direct, and open attack upon adjustment problems too difficult for them. Hysteria seems in every instance to be a more satisfying type of adjustment than any which the patient knows. While it is true that hysteria is a form of maladjustment, the nurse should guard against the conclusion that hysterical patients are malingering or pretending to be ill.

Hysteria probably starts with reactions to some of the organic symptoms which are characteristic of emotional stress. A child, for instance, who, for some reason, is afraid to go to school on a certain day, can easily persuade himself that he has a sore throat because of the constriction of throat muscles and the dryness of the throat which characterize emotional disturbance. His ailment is real to such a child, even though it is usually of very short duration. If he is allowed to remain at home, his fear of something that may happen in school on that particular day is removed; because he is no longer tense his throat condition speedily returns to normal. It would not be fair to say that the child planned deliberately to pretend to have a sore throat as a means of self-protection.

If the situation which he fears on certain days of the week remains unchanged, he will be emotionally disturbed, the following week, on that day, and the week after that and as long as the situation is not remedied. Becoming emotionally disturbed, worried, and fearful about something which may happen in school, he will again be alert to the throat symptoms which served as a solution to his problem at an earlier time. He may pay particular attention to his throat to see if perhaps it may not again prove to be sore. As in the first instance, he can easily persuade himself that he is not able to go to school and, once more, a sore throat will have served as a solution to his problem. Little by little, he may form the habit of professing to have a sore throat whenever he wishes to be safeguarded from something which he fears, outside the safe shelter of his home. Even though the throat ailment may become habitual, and even though it may serve to protect the child from situations which he fears, it is still not fair to say that he is malingering or deliberately planning his illness. The habit, in this case, develops so gradually that the child is convinced that his convenient ailment is real.

Under conditions of unusual stress, hysterical symptoms sometimes appears to develop suddenly, as in the case of the service man on combat duty who suddenly becomes blind or in some other way becomes hopelessly incapacitated for combat duty. Even though such aggravated symptoms may seem to develop suddenly, it is unlikely that such persons are manifesting hysterical symptoms for the first time. As in the case of the child, the hysterical adult is likely to be one who has formed habits of adjusting by ailments so gradually and in so subtle a way that his illness appears to him

to be very real. As in the case of the child whose convenient sore throat serves to protect him from hazards which he cannot face, the adult who suffers from hysterical symptoms is protected from hazards which he cannot face. This does *not* mean that adjustment by hysterical ailment is a *deliberately planned* means of escape from hardship.

Neurasthenia.—Emotional tensions tend to be physically exhausting. Neurotic persons who, as we have observed, tend to be tense a great deal of the time, are often excessively fatigued without apparent cause. A type of neurosis which is characterized by fatigue, due primarily to emotional tension, is sometimes called *neurasthenia*. A neurasthenic person, like the hysterical person, complains of physical disturbances which are due to conditions other than actual impairment of organic structures. Unlike the patient whose ailment is hysterical in nature, the neurasthenic complains of less localized and less clearly defined ailments. In addition to being fatigued, he complains of vague aches and pains in different parts of his body. He may suffer from insomnia, and he is sometimes subject to digestive disturbances.

As in the case of the patient suffering from hysteria, it is a mistake to assume that the ailments of the neurasthenic are not real to him. A patient may feel as fatigued when his weariness is due to prolonged emotional tension as he would if he had become tired because of vigorous physical exercise. Sometimes neurasthenic patients are advised to disregard their symptoms entirely and to force themselves to carry on as they would if they were feeling well. This is not always good advice. One neurasthenic patient, a middle-aged woman who felt "too weak to get out of bed in the morning," in trying to prove that there was nothing wrong with her, engaged in such strenuous activity each day that she was not only exhausted, but hopelessly discouraged. She soon began to brood over her condition and concluded that she was becoming insane. When she was encouraged to admit that she was tired, but to try to do each day a little more than she had done before, her maladjustment became less acute.

Neurasthenia, in and of itself, does not often cause a patient to be hospitalized, but it does often greatly complicate the hospital experience for both the patient and the nurse or doctor when the patient who is hospitalized for actual physical disability is also neurotic.

Hypochondria.—A person who worries excessively about the state of his health and who tends to exaggerate minor ailments, is sometimes designated a *hypochondriac*. He appears to be more anxious about himself than patients suffering from other ailment neuroses, and he is more inclined to capitalize his illness. In spite of his concern about his health, his ailment seems to be somewhat gratifying to him. As is the case with other neurotics, the

adjustment that he makes seems to be preferable to being buffeted by the hardships of a less sheltered life.

Anxieties.—Patients who adjust by ailment are more or less anxious about their health, but, because of their preoccupation with their ills, they manage to escape from many frustrating situations in daily life. Not all disturbed and frustrated persons hit upon ways of adjusting to stress and strain by illness. Not all worriers obtain release from tension by talking about the innumerable petty details which worry them. Some who are frustrated and, therefore, tense, find no relief from emotional tension and so, become unduly anxious about all sorts of things. When no outlet is found, emotional disturbance may become profound, and the person may live in a condition of morbid fear. In states of extreme anxiety a patient may manifest the physical symptoms which commonly characterize emotional tension. He may or may not complain of such symptoms but, unlike those who adjust by way of ailments, the attention of a patient who presents a typical picture of *anxiety neurosis* is unlikely to be concentrated upon his physical symptoms. He is more likely to be intolerably tense because of a sense of impending disaster.

Psychasthenia.—A certain form of neurosis which the nurse in psychiatric practice is more likely to encounter than the nurse on general duty, is often designated as *psychasthenia*. It is a term used to describe a disorder which is characterized by *phobias* (intense fears), *obsessions*, and *impulses*. A normal person can appreciate, to a limited extent, what is meant by a phobia if he happens to have a persistent fear of being confined in a crowded space or of finding himself at a great height. In everyday life, a person who has a “single-track-mind” illustrates what, under certain conditions, is called an obsession or fixed idea. A sense of being driven because of the pressure of activity is something which most normal persons experience at times; this experience gives us some appreciation of what is meant by an impulsion. *Psychasthenia* with its characteristic disturbances is mentioned here to complete the picture of a common classification of neuroses: ailment adjustments, anxieties, and psychasthenia.

PSYCHOSOMATIC RELATIONSHIPS

Ailment adjustments which are marked by the absence of physical symptoms, other than those that can be attributed to emotional tension, have been listed among the neuroses. In a “purely” neurotic ailment, there is no pathological condition of body tissues to be found. Continued emotional tension, however, prevents normal bodily functioning. It is probable that

there is no ailment which should be regarded as *purely psychological*. On the other hand, it is probably just as true that no ailment can ever be regarded as *purely physical*. Illness which is due to localized, pathological conditions cannot fail to influence the emotional (psychological), reaction of a patient. There is an interaction between organic changes which characterize emotional stress and so-called *psychological* reactions which is so complex that it seems inadvisable to try to make a clean-cut distinction between the two.

This interaction of psychological and somatic factors in emotional maladjustment and in specific illness is sometimes designated as *psychosomatic relationship*. Various diseases in which a pathological condition exists appear to be aggravated by emotional factors. It is even possible, according to a group of medical men, that a functional disorder in which there is no initial impairment of tissues may eventually lead to organic disease. According to this viewpoint, it would be possible for a person to die of a "broken-heart" induced by continued emotional stress. In cases of organic heart disease, the relationship between anginal attacks and extreme emotion has been demonstrated frequently. Asthma is often complicated by fear of an attack and, unfortunately, anxiety and emotional stress may bring about an attack. The attack and the worry lest an attack occur operate in a vicious circle.

A detailed discussion of the psychosomatic point of view in medicine and psychology is clearly beyond the scope of this book, but, since the text aims to make practical applications of psychology to nursing, a mention of one or two research studies in this field does not seem to be out of order.

Gastric and intestinal disorders are frequently aggravated by emotional stress and, as in the case of asthma, emotional and organic factors may interact in such a way as to make diagnosis difficult and treatment and nursing care complicated. In one situation the emotional behavior of 30 patients with gastric ulcers and 3 with gastritis and duodenitis was studied.¹ It was noted that all appeared to be frustrated and that they evidenced extreme anxiety and insecurity.

It is occasionally possible to make a direct study of the relationship between emotional excess and organic disorders, as in the case of a patient with a fistula (an abnormal and often ulcerous opening leading to an internal organ). In one such case it was possible to study tissue changes under conditions of emotion.² It was noted among other changes, that acid secretion was sometimes inhibited and sometimes increased, depending upon the emotional reactions of the patient. It was also observed that manifest changes such as these were sometimes accompanied by the patient's complaint of abdominal pains or heartburn.

SERIOUS MALADJUSTMENTS

When maladjustment becomes so severe that a patient, because of his maladjustment, cannot take care of himself, his illness is sometimes diagnosed as insanity or *psychosis*. The average person knows very little about the nature or cause of insanity. An insane person is believed by many to be unique and set apart from his normal associates. In this chapter and throughout the text an effort has been made to indicate that there are no clean-cut lines which set any one person apart as greatly different from his neighbors. An insane person manifests various quirks and foibles "even as you and I." The difference between an insane person and one who is regarded as normal is that the insane person has too many quirks and foibles and is too unrealistic in his attack upon life's problems.

Once more the figure used in an earlier chapter to suggest that human characteristics cannot be considered in terms of black *versus* white may prove helpful. (See Figure 11, page 44.) Using the figure to illustrate the merging of good adjustment with somewhat less good, slightly neurotic, neurotic, more neurotic, and varying degrees of insanity, it becomes evident that there is no clear dividing line between individuals classified according to their ability to withstand strain and frustration. Assuming that the average person is represented by one of the intermediate shades of gray, and that a perfectly adjusted person who always reacts directly and in a forthright fashion is represented by white, then the person who is 100 per cent maladjusted would be represented by black. The better adjusted person obviously tends toward the white side of the diagram, the less well adjusted toward the black. Some place away from the center on the darker side are neurotics. Still nearer to the black end of the figure are the insane. It is hard to tell where any line is drawn.

Learning to Be Insane.—Among the poor adjustments noted in daily life is the tendency to withdraw from social activities and to assume the role of an on-looker rather than a participant. When the tendency becomes exaggerated, a *shut-in* personality develops. Finding it too difficult to withstand the strain and frustration involved in living with others, a shut-in person tends to daydream and to build for himself a world of make-believe in which he can play a satisfying role.

When the daydream is prolonged and accepted uncritically, the borderline between insanity and less serious maladjustment is crossed. In almost any hospital for the insane one may find Napoleons scrubbing floors and the world's most powerful and eminent men raking leaves or washing dishes, untroubled by the inconsistency of their eminence and their work. The con-

quering hero daydream has become a *delusion of grandeur*. Among the insane there are always some patients who suffer from *delusions of persecution* which are an exaggerated form of the suffering hero daydreams of the person who, in normal life, is always misunderstood and "never gets a square deal." When suffering hero daydreams dominate a person's life, he too crosses the ill-defined borderline which separates the neurotic from the insane.

Among the neurotics are some whose persistent anxiety and preoccupation with themselves make a realistic pattern of living almost impossible. Some of these, as has been indicated, are not far removed from the normal in their reactions to strain and frustration. Just how close some of the others may be to the borderline of insanity is hard to say.

One form of neurotic behavior, *psychasthenia*, has been mentioned only. When neurosis takes this form the patient suffers from phobias, obsessions and compulsions. When a totally unreasonable phobia becomes so extreme as to be a dominating factor in adjustment, it is possible that the psychasthenic person should be designated as *insane*. Similarly, when a patient is obsessed by an idea which a normal person would immediately discard as not justified by facts, it is possible that he too should be rated among the psychotic. Occasionally, one may read of a crime committed by a person who appears to have no sense of guilt and who steadfastly maintains that he was compelled by some force outside himself to do what he has done. Whether such a person is insane or not is not readily determined in law, but a diagnosis of insanity in such a case sometimes rests upon the patient's lack of realization of the absurdity of his behavior.

It is apparent that some persons need more guidance than others, not only in childhood, but throughout life. Some need to have their way made as easy as possible. Everyone needs to be safeguarded from *unnecessary* thwarting and frustration, just as everyone needs to learn to stand up under the frustrations which are essential to social life. It is probable that the right kind of guidance might have made it possible for many inmates at institutions for the insane to adjust to active life. If, in their childhood, their parents and teachers had recognized that they needed help in meeting frustration and withstanding strain, some who later have become insane might have been salvaged.

In characterizing insane or abnormal behavior as different from the more nearly normal, we have suggested that the overdevelopment of traits such as a tendency to daydream, to withdraw from active life, to be persistently anxious, or to suffer from morbid fears or obsessions might lead to insanity. The purpose has been to add emphasis to a point of view which has been

maintained throughout this chapter; that the abnormal is often merely an unreasonable exaggeration of the normal. Actually no one is adjudged insane on a single trait. The sum total of all the symptoms must indicate that the patient cannot look out for himself and that he is unable to get along without care. A complex of many symptoms must be considered before a diagnosis of insanity can be made.

Although it is true that some cases of insanity could have been avoided, there are other instances in which its development could probably not have been checked entirely. Some forms of insanity seem to be due to organic disorders such as head and brain injury, infection, the influence of drugs and alcohol, and the changes which accompany the menopause and senility. Relatively few persons, however, become insane because of alcohol, drugs, or infections. Even in cases in which organic disorders are prominent, however, (with the exception of brain and head injuries), experiences (learning), cannot be disregarded. Obviously, old age and the period of transition from middle age to senescence do not offer insurmountable hazards to the average person.

Predisposing and Exciting Causes of Insanity.—Many men in the armed services break down before being assigned to combat duty. These are the men who are not able to stand up under the drastic habit changes and the emotional stress involved in shifting from civilian to military life. Their unreadiness to adapt to service, whatever the causes of their unreadiness may be, is a *predisposing* factor in their breakdown. If there had been no war, and if their daily routine had not been completely disrupted, many of these men would not have suffered a breakdown. The *exciting* cause of their break is their entry into military service, with the many adjustments which military service demands.

A person cannot break down because of predisposing factors alone, however. There are many sheltered persons whose adjustment is never very good but who nevertheless do not become insane. The predisposing factors in such cases are present, but the exciting causes are lacking. On the other hand, there are many persons who can stand up under all sorts of stress without breaking. In some instance the exciting factors are present, but the predisposing factors are lacking. Predisposing factors alone or exciting factors alone cannot induce insanity, but a combination of the two may.

Some Forms of Insanity.—In addition to psychoses which have an organic basis, there are two forms which are common: schizophrenia (*dementia praecox*), and manic depressive insanity. The student nurse, in her psychiatric affiliation, will have an opportunity to study such disorders; all that she needs at this time is a statement about each of these common forms of

insanity to complete the over all picture of degrees and kinds of reactions to stress and strain.

Schizophrenia.—This type of insanity, which is the most common cause of admission to psychiatric hospitals, develops relatively early in life, some time after puberty. It is characterized by extreme seclusiveness. The patient is withdrawn from active life and indulges in reverie and daydreaming. His emotional reactions are not consistent with his experiences. They do not seem to be related to what has happened to him. Hence the term schizophrenia, which suggests a splitting or schism of the personality. The causes of schizophrenia, or dementia praecox, are not clearly established. As in the case of all other psychoses, both predisposing and exciting factors enter into its development. In textbooks that were published some twenty or more years ago it was commonly stated that this form of insanity is, in most instances, to be traced to hereditary factors. A more recent point of view places a great deal of emphasis upon environmental factors.

Manic Depressive Psychoses.—In everyday life our emotional ups and down are not too extreme for comfort. A well adjusted person is usually serene and contented. He is not often highly elated; he may be slightly disturbed at times, but he seldom experiences the depths of despondency. A patient who suffers from manic depressive psychosis does not know what it means to enjoy a low level of emotional exaltation and depression. He fluctuates from one extreme to the other. He knows only the heights and depths of emotional expression. As in the case of schizophrenia, this form of insanity is the result of both predisposing and exciting causes.

SUMMARY

All life involves adjustment. Man has always made adjustments and always will make them. The process of adjusting involves a certain amount of stress and strain, sometimes much and sometimes relatively little.

A person who becomes tense because of being thwarted or blocked may be said to be *frustrated*, because he does not know what to do.

Symptoms of emotional tension, due to the blocking of impulses, are often not recognized. The emotional disturbance of a person who is very exacting and complaining is more evident than that of one who is silent, uncomplaining and shut in, but the silent person may suffer from tensions that are more severe than those of one who is more expressive. Tension is sometimes manifested in nervous mannerisms.

Environmental obstacles which block progress, literally as well as figuratively, are among common causes of frustration. Economic adjustments are

sometimes so difficult as to prove frustrating. Restrictions and taboos are often frustrating, especially in childhood. A person who is the object of group prejudice cannot escape from many frustrating experiences.

When habits and motives are in conflict, a sense of frustration is inevitable. Hospitalization often involves a conflict of habits and motives.

A well adjusted person is one who can withstand a certain amount of necessary blocking without feeling frustrated. In caring for the ill, however, the nurse tries to safeguard her patients from frustrating situations as far as possible.

The ways in which a person might react to frustrating situations are varied. Direct, forthright attack upon the cause of blocking is the most successful and the most permanent method of reducing tensions. There are many less direct methods which appear to lessen tensions, somewhat, without removing the cause of the blocking.

Some persons appear to make thwarting circumstances more tolerable by resorting to defensive reactions. Compensation is one type of defensive reaction; a person may compensate for a handicap by exaggerating certain of his responses. When a tendency to compensate is accompanied by an attitude of being on the defensive, it is an evidence of tensions retained, or maladjustment.

Among defensive reactions to be observed commonly is egocentrism, a tendency to attract attention to oneself. A different tendency, to project responsibility or blame upon another person, is also a defensive reaction.

A type of defense which the nurse may observe, occasionally, is a tendency to make the most of illness, or to capitalize a handicap.

Defensive adjustments are attempts to get rid of tensions. They are to be regarded as evidences of serious maladjustment only if they are habitual.

A person may adjust by withdrawing from thwarting circumstances,—by running away from situations which tend to be frustrating. Seclusiveness and timidity are indications of an inability to withstand being blocked. A tendency to fall back upon ways of behaving which, although they may once have been adequate, are not adapted to a present problem, is another evidence that a person is adjusting by withdrawing.

A type of withdrawing behavior which is characteristic of fairly well adjusted persons, as well as of those who are evidently seeking escape from intolerable tensions is a tendency to identify oneself with another person.

Various types of withdrawing behavior, like defensive methods of finding release from tension are evidences of serious maladjustment only when they are habitual.

One of the most popular methods of easing tensions which might, other-

wise, be hard to bear is to practice self-deception. Rationalization, or uncritical justification of one's motives, is a tendency which almost anyone can discover in himself. Two easily recognized forms of rationalization are *sour grapes* and *sweet-lemon* adjustments.

Adjustments by self-deception, like other indirect methods of seeking tension release, are not to be regarded as abnormal or as evidence of serious maladjustment.

Daydreaming tendencies, while not necessarily an evidence of an attempt to escape from frustrating circumstances, are often an indication of tendencies to withdraw and to deceive oneself. In everyday life, we find the *conquering hero*, a person who, on a small scale, enacts a role which is something like the role assumed by an insane person who has *delusions of grandeur*. The *suffering hero* in daily life is not totally different from the insane person who suffers from *delusions* of persecution.

Some persons make frustrating situations tolerable by developing *logic-tight compartments*. One who adjusts in this way does not *let his left hand know what his right hand is doing*.

A very non-constructive way of attempting to adjust to frustration is to refuse to admit that a problem exists. A person who adjusts in this way represses his emotions; he is bottled-up.

A neurotic person does not find it easy to get rid of his tensions. He is too *nervous* and has too many maladjustments to make it possible for him to get along comfortably in a group.

The ailments of a neurotic person are often both "physical" and "psychological"; the two factors can be separated only arbitrarily. A neurotic sometimes suffers from nervous disorders which cannot easily be traced to a pathological organic condition.

A person whose neurotic ailment is diagnosed as *hysteria* may show signs of acute physical disorder, in spite of the fact that no structural difficulty is to be discovered. His difficulties appear to be localized, but he is not always consistent in the symptoms which he shows. We have no reason to believe that hysterical symptoms are deliberately planned. Hysterical ailments are very real to those who suffer from them.

A neurasthenic adjustment is often characterized by excessive fatigue and by ailments that are not clearly defined or definitely localized. Like the hysterical patient, one who suffers from neurasthenia may find his ailments as hard to endure as if they were due to readily located organic abnormalities.

An excessive concern about one's state of health and an exaggeration of minor ailments is sometimes diagnosed as *hypochondria*.

Ailment adjustments are always marked by more or less anxiety but, be-

cause patients who adjust by ailment are so preoccupied with their ills, they manage to escape from much of the stress and strain that they would otherwise experience.

A patient who suffers from an anxiety neurosis, does not find ready release from his tensions; he is likely to be intolerably tense and is sometimes greatly disturbed by a sense of impending disaster.

Psychasthenia is a form of neurosis which is characterized by phobias, obsessions and impulsions. The student nurse, in general practice, as a rule, meets such patients less frequently than other types of neurotic patients.

The interaction of psychological and somatic factors in emotional maladjustment is marked. Various diseases appear to be aggravated by emotional factors. It is possible, according to one viewpoint, that continued and extreme emotional stress may result in actual tissue impairment.

When maladjustment becomes so severe that a patient, because of his maladjustment, cannot take care of himself his illness may be diagnosed as *insanity*, or *psychosis*.

The difference between an insane person and one who is regarded as normal is that the psychotic has too many quirks and is *too unrealistic* in his adjustments. An insane person is more extreme than a badly adjusted, but still normal person, in his tendencies to daydream, to withdraw from active life, to be persistently anxious and to suffer from morbid fears and obsessions. Psychotic reactions are an *unreasonable* exaggeration of the normal.

Some forms of insanity are due to organic disorders, infections, the influence of drugs and alcohol, and to changes due to age. In many instances patients learn to be insane.

Some unstable persons seem to be *predisposed* to insanity. They need to be safeguarded from the hardships of life. If they are sheltered and protected from excessive frustration they need not become psychotic. If they are subjected to unusual stress and strain, they are likely to break. Predisposing and exciting causes must both be considered in looking for causes of insanity.

The two most common forms of insanity are schizophrenia and manic-depressive psychoses. The schizophrenic is characterized by extreme withdrawing tendencies. One who suffers from manic-depressive psychosis knows only the heights and depths of emotional experiences.

1. **Committee activities.** Organize committees to gather illustrations of either good or poor adjustment to common causes of stress and strain. Each committee should select one of the following causes and should try to gather illustrations from as many groups as possible,—patients, student nurses, children, neighbors, etc. Discuss in class.

- (1) Environmental obstacles
- (2) Economic adjustments
- (3) Restrictions and taboos
- (4) Group prejudices
- (5) Physical handicaps
- (6) Conflict of motives

2. **Notebook suggestion.** (Do this only if you can enjoy a laugh at your own expense.) As you observe any adjustment mechanism of your own (defensive reactions, withdrawing behavior, self-deception, daydreaming or logic-tight compartments), make a note of your reaction. Refer to your notes occasionally for *first hand* experiences which should help you to understand the adjustments of other persons.

3. Discussion.

- (1) What is your idea of a forthright, direct attack upon a problem?
- (2) To what extent is identification with another person desirable? Under what condition is it undesirable?
- (3) If you believed a patient to be neurotic what attitudes do you think you should assume toward him?
- (4) If a patient seems to be capitalizing upon illness what do you think might be a fundamental lack in his life?
- (5) If you had two children in the ward, one a very shy child and one a "show-off", could you discover a common need? To what extent might you treat the two in the same way?
- (6) How might you safeguard an unstable person from possible insanity?

SUGGESTED READING

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Abnormal personalities are discussed in Chapter XIX.

Gates, Arthur I., Jersild, Arthur T., McConnell, T. R., and Challman, Robert C. *Educational Psychology*, New York: The Macmillan Co., 1942.

Causes and types of maladjustment are discussed in Chapter XVIII.

Meltzer, H. "Mental Hygiene and Learning," *J. Appl. Psychol.*, 1942, 26, 268-284.

A very good, non-technical reference.

Poffenberger, A. T. *Principles of Applied Psychology*, New York: D. Appleton-Century Co., 1942.

Chapters XXXII and XXXIII discuss the prevention and diagnosis of maladjustment and disease.

Shrodes, Caroline, VanGundy, Justine, and Husband, Richard W. *Psychology Through Literature: An Anthology*, New York: Oxford University Press, 1943.

Sections on "Emotional Conflicts," "The Neuroses" and "The Psychoses" include selected excerpts from literature illustrating various maladjustments.

Zilboorg, Gregory, and Henry, George W. *A History of Medical Psychology*, New York: W. W. Norton and Co., Inc., 1941.

In Chapter XIV, the history of mental healing is discussed. Early methods of caring for the emotionally disturbed and lunatics are described.

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¹ MITTLEMANN, B., WOLFF, H. G., and SCHARF, M. P. "Emotions and Gastroduodenal Function: Experimental Studies on Patients with Gastritis, Duodenitis and Peptic Ulcer," *Psychosom. Med.*, 1942, 4, 5-61.

² WOLF, S., and WOLFF, H. G. "Evidence of the Genesis of Peptic Ulcer in Man," *J. Amer. Med. Assoc.*, 1942, 120, 670-675.

Chapter XII

WHAT IS PERSONALITY?

A discussion of personality cannot be confined to a single chapter. In this text, as in many modern psychologies, the topic is touched upon in all chapters. Every characteristic of an individual which makes him *stand out* as a person who is not like anyone else contributes to his personality, or to his uniqueness. We have considered student nurses as they enter training and have noted that each one takes to her training her own unique equipment of interests, academic background, physical assets and liabilities, social and emotional habits, and her own very unique attitudes toward herself and others. We have observed that patients in the hospital also are different in their habits, attitudes, beliefs, preferences, and prejudices.

We have considered differences in intelligence which obviously contribute to individuality, as do the motives which dominate the life of each one of us. Knowledge, skills, and special aptitudes must not be disregarded in a study of factors which combine to make every person unique. Characteristics of thinking such as freedom from bias or its opposite, or a tendency to jump at conclusions are distinguishing traits. Social beliefs and attitudes have a great deal to do in making of everyone the kind of person that he is.

Each person is unique also in his temperament or disposition. The ease or the difficulty with which he adjusts to frustrating situations contributes further to any one person's uniqueness or individuality.

It would be impossible to list all the personality characteristics of anyone. To make a complete personality study of one person we should need to consider all of his *physical* and *intellectual characteristics*, his *emotional make-up*, all of his *overt behavior*, and his less readily observed *motives* and *attitudes* toward himself and other persons. After we had studied all these characteristics, we should need to consider how they all fit together.

By selecting a few traits and comparing one person with another, we can add to our appreciation of the uniqueness of each. Children are more spontaneous than adults; for this reason they are good subjects for personality studies based upon controlled observation. In a study of children between the ages of two and four, some interesting records were made.* Using a rank-

* From an unpublished study made by the author.

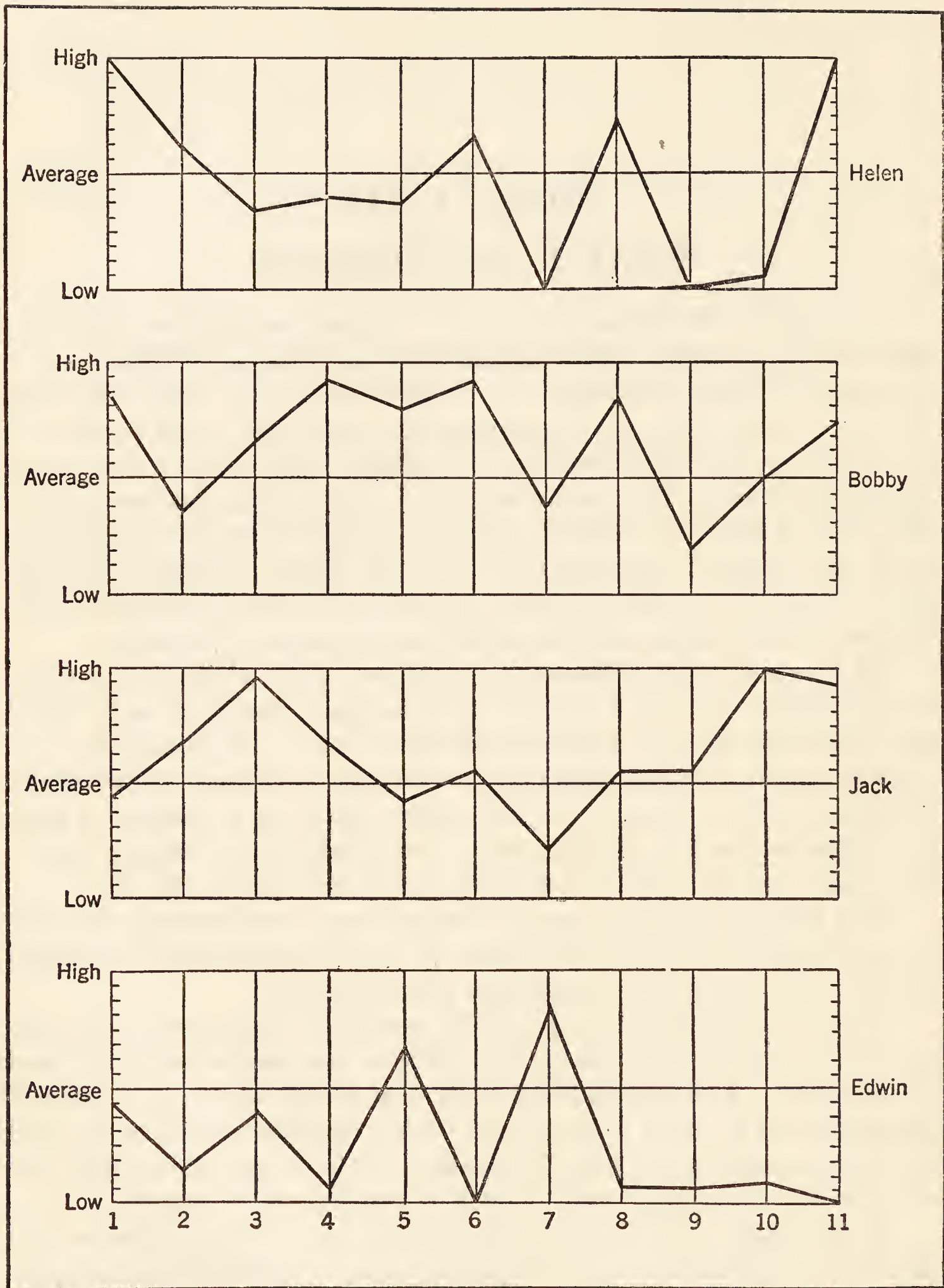


FIG. 40.—RATINGS OF PRESCHOOL CHILDREN ON ASPECTS OF SOCIAL ADJUSTMENT.

1, property rights; 2, health habits; 3, group comfort; 4, group adjustment; 5, formality; 6, care of materials; 7, violations of standards; 8, observation of standards; 9, helpfulness; 10, sportsmanship; 11, laughing.

ing method and ranking the children from those giving *most frequent evidence* of certain traits to those giving *least frequent evidence*, it was noted that every one of the 17 children was uneven in the development of the traits studied, and that there was no child who did not score above average on one or more traits and below average on at least one other trait. The unevenness of development is suggested in Figure 40 in which trait ratings are compared.

Further evidence of uniqueness of personality make-up is shown in Figure 41 in which four of the children are compared on: *good sportsmanship* (being a good loser); *helpfulness*; *observance of formalities* (thank

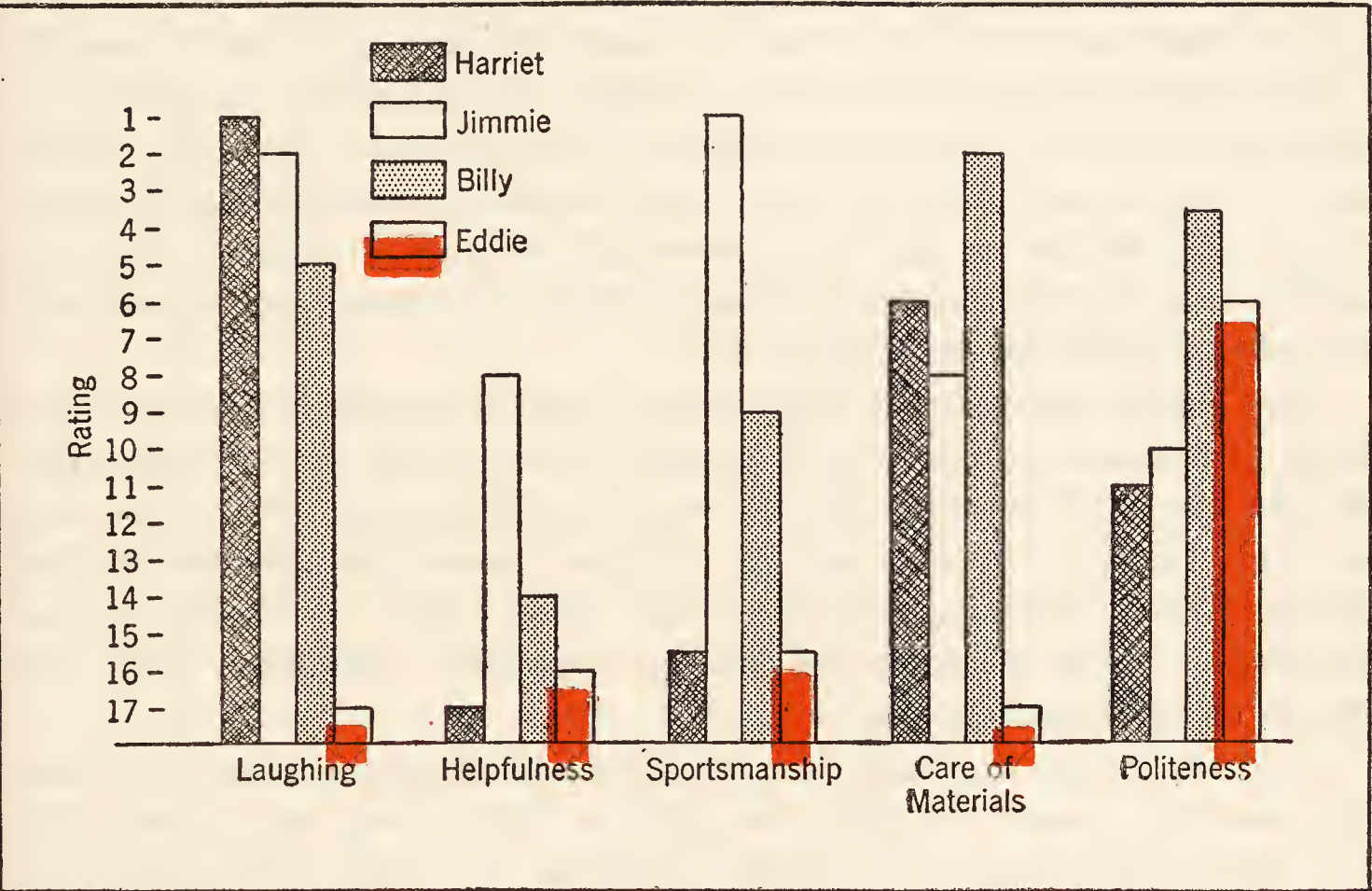


FIG. 41.—RATINGS OF FOUR NURSERY SCHOOL CHILDREN ON FIVE TRAITS.

you, etc.); and *frequency of laughing*. While we get only an incomplete picture of each child, the comparison of traits tells us something significant in each case.

PERSONALITY AS INTERACTION

Personality is something which does not flourish in a vacuum. If we were to attempt to tell all that we know about one of our associates, we should discover very soon that our own reactions to this person and his reactions to us give color to our narrative. If we make an unusual effort to be objective we can, perhaps, avoid personal bias but, for our individual reactions we shall

substitute those of other persons. Personality must always be considered in terms of interaction, or person-to-person relationships. The way in which one causes his associates to react is sometimes called his *social stimulus* value. The way in which one reacts to associates is usually discussed under *attitudes*.

Personality as Social Stimulus.—*Physical appearance* is an important aspect of personality. It is sometimes difficult for a student to accept this statement because maxims such as “pretty is as pretty does” or “beauty is only skin-deep” tend to cause confusion. When we say that appearance is a factor in personality we are not *evaluating* physical characteristics. Being tall, dark, and handsome does not make anyone a *better* or necessarily a more *pleasing* person than if he were short, fair and plain; he merely impresses us differently. A person who has an unusual gait is neither a better nor a worse person because of his way of walking, although we do notice his gait. His vitality or lack of it cannot fail to impress us, as do his mannerisms and any physical peculiarities which he may have; such characteristics help to emphasize his individuality.

Two experimental studies suggest that a slight change in appearance is likely to influence reactions to a person. In one study, it was found that persons who were wearing glasses when one photograph was made were not rated the same by observers as they were when photographed without glasses.¹ When wearing glasses they were rated higher in intelligence, dependability, industriousness, and honesty than they were when they were photographed without glasses.

A further study was made with subjects who appeared in person, sometimes wearing glasses and sometimes without.² Those who rated them when they wore glasses rated them more intelligent and more industrious than did the groups before whom they appeared without glasses.

We react differently to persons of different *intellectual capacities* and habits. A very bright person does not influence those about him in exactly the same way as he would if he were relatively dull. One who is inventive and original in his ideas exerts a certain kind of influence because of his inventiveness and originality. One who is objective and judicial in reacting to problematic aspects of adjustment impresses his associates in a way that is different from the way that he would impress them if he were less objective and less judicial in his tendencies. A well-informed person usually obtains a response from associates which is quite unlike their response to one whom they regard as ignorant.

We react to variations in *temperament*. Some persons are quick-tempered; some are not easily ruffled. Some we regard as jolly; others we describe as

crabby. In describing such personality traits we suggest how we feel about them. While it makes a great deal of difference to an individual whether he be hot-tempered, calm, lively, quiet, sensitive, or "hard-shelled"; from a social standpoint, his temperamental traits are significant only because of the way in which other persons react to him.

Social behavior, in its very nature, must be considered in terms of interaction. An aggressive person, for instance, makes the lives of those around him much less placid than if he were meek and submissive. A leader encourages others to follow him; otherwise he could not lead. A quarrelsome person must have someone with whom to quarrel. The implications are so obvious as to need no elaboration.

Personality as Attitudes.—In an earlier chapter (see Chap. VI), we have considered *personal worth* motives. Such motives influence personality profoundly. When social relationships are such that a person can feel that he is secure, that he is approved, that he belongs, and that he is someone of unquestioned integrity, he is likely to be a well adjusted person. When he is blocked in his attempts to prove that he is worthy, maladjustment is the result. A good or poor adjustment is essentially a matter of attitudes,—attitudes toward oneself and attitudes toward others. In studying personality, attitudes are of basic importance. In preceding chapters we have already discussed reactions to strain and frustration at some length. Differences in *reaction to obstacles* contribute fundamentally to differences in personality. Some persons react directly and in a forthright fashion; some fall back upon defensive subterfuges; some withdraw from situations that are thwarting. There is no single group of attitudes constituting personality that is of more importance than attitudes toward obstacles.

Social attitudes and *attitudes toward oneself* are so interdependent that they cannot be separated in a consideration of personality makeup. (A review of Chapter IX is recommended at this point.) A person's attitudes toward associates in general, toward property rights, toward his social responsibilities, and toward public issues of various kinds are illustrative of social attitudes which enter into differences in personality.

FAMILY EXPERIENCES INFLUENCING PERSONALITY

Since every characteristic of an individual enters into his personality, it is evident that personality is, to a limited degree, hereditary. Temperament, or disposition, for example, is believed to be somewhat dependent upon structural heredity, although heredity and environment are so interdependent that the two sets of factors cannot be separated. Parents who are hot-tempered

or irritable often have hot-tempered or irritable children. Serene and even-tempered parents often have serene and even-tempered children. It cannot be argued from such resemblances that the traits mentioned are mainly hereditary, even though it is probable that they are influenced by inheritance. Two quick-tempered persons who live together create for themselves an environment in which each one encourages the other to engage in temper outbursts. If one of the two were placid and serene in disposition, the two would live in an environment in which the tempestuous member of the pair might be encouraged to be less tempestuous, while the serene one might be encouraged to become ruffled upon occasion.

Experiences During the First Year of Life.—Personality differences are marked even during the first year of life. Some variations are, no doubt, dependent upon hereditary factors, but the influence of environment appears to be tremendous. To some, the suggestion that the social experiences of babies vary greatly may be surprising, because we tend to think of all babies as leading such simple lives that differences in experience would be reduced to a minimum.

In a study of 100 one-year-old babies that was undertaken for another purpose, an informal record was kept of each baby's emotional reactions to a situation in which he was encouraged to do something which required considerable effort upon his part. Some of the observations are outlined in the following excerpts.*

Most of the babies were moderately friendly, and graciously tolerant of the clinic examiners, provided the mother was close by; but . . . there were a few who cried if a stranger approached them and others who appeared happy in leaving their parents to go with an unfamiliar adult into a strange room. . . .

Some of the tests in the motor series placed the baby in situations which were difficult. He was called upon to climb up steps and over obstacles, up elevations and down. One obstacle in particular, a board elevated about four inches, appeared to be especially challenging, and babies differed greatly in the way they attacked the problem of climbing over it. Like adults whom we all know, these babies had their own ways of meeting difficulty: some by direct and cheerful attack, others by methods which are less direct or less cheerful, and others by obvious evasion. A few babies, selected from the large group studied, illustrate the wide range of human reactions to tasks which are hard to do.

* From "How Heredity and Environment Affect Your Child," by Bess V. Cunningham. Published in *Parents Magazine*, 6, (Sept.), 1931, pp. 22-23, 58-60. By permission of the publisher.

Emily at the age of one year was a good-natured, healthy, happy baby, essentially normal in physical development. When brought into the laboratory she responded happily to strangers and seemed inclined to invite them to frolic with her. Emily was placed upon the floor . . . and a toy which she liked was placed beyond her reach. She looked at the toy, immediately pulled her forces together, and reached for it in a vigorous, alert way. She was then placed in such a position that she had to climb over a four-inch bridge in order to reach any of the toys that she wanted. She accepted the situation amiably, looked at the experimenter, and at her mother, and then with a great effort climbed upon the bridge and down again, reached the toy and seized it laughingly. . . .

Julie presents an interesting contrast. When she was brought to the laboratory she clung to her mother, although she did not cry when strangers approached her. She went into the experimental room quite willingly and was placed upon the floor with a toy just beyond her reach. Julie looked at the toy and immediately her lip began to quiver. She reached a pathetic little hand to her mother, turned appealingly to her, whimpered and waited for her mother to come to her rescue. . . .

Anne was a different kind of little person. She was serious and undemonstrative while in the clinic. She left her mother without protest and went with the examiner into the experimental room, although her mother followed. When Anne was placed upon the floor, with the toys just beyond her reach, she immediately made a great effort, crawled to get a toy, picked it up, examined it seriously and demonstrated little joy at her success. Anne was then placed behind the bridge with a toy on the opposite side. She climbed upon the bridge and down again and crawled after the toy in the same sober, determined, quiet manner that had characterized her behavior before. We wondered if business-like Anne would not have been a different baby if she had lived the first year of her life under the guidance of fretful Julie's mother and father.

Lee, another one-year-old baby, while in the clinic, appeared to be good-natured, friendly and even-tempered. Lee was apparently not accustomed to having his mother safeguard him from all difficulties; he demonstrated in the course of his visits to the laboratory that he had learned to look out for himself in many situations, without asking for any adult aid. When he was placed in the experimental room, with the long bridge separating him from the toys which seemed to interest him, he looked into the examiner's face pleasantly, merely glanced at his mother and then turned away from the bridge and the toy which could be obtained only by great effort. He seemed to be looking about for something else which might prove diverting and at the same

time much easier to attain. He turned to the shelves behind him upon which some of the experimental materials were piled. One by one each object was removed from his reach, but he still remained placid, and still showed no disposition to try to climb over the bridge and reach the toys on the other side. Finally, nothing remained for Lee but the bare shelves, but he managed to busy himself happily, patting the shelves and looking at the examiner with an expression which seemed to say "at last I've found something which is easy to get and easy to keep." Lee was apparently developing habits which made it easy for his mother to take care of him, but he was, at the same time, developing certain habits of following the line of least resistance, and in a good-natured, docile way turning his back upon difficult problems.

Marion's response to difficulty was unique. When she was placed in the experimental room with a long bridge making an obstacle which had to be surmounted before she could reach the toys on the other side, she climbed upon the bridge without hesitation, but as she climbed she grunted protestingly. By the time she had gotten over the bridge she was angrily crying; but she did not once pause in her forward movement. . . .

. . . At first it was practically impossible to test one-year-old Edna because she objected so strenuously to taking directions; when a new object in the test series was offered she would consistently refuse it and would cling with great determination to a different object. A glance at the home environment of this bright baby explains much of her behavior. She lived with her parents and grandparents and two maternal aunts, all of whom took delight in serving her and in conspiring to shield her from petty hardships. Mother and grandmother could not say whether the child was stubborn or not, because at the age of one year she had never been crossed.

Marie, unlike Edna, was not the victim of attention from *too many* adults. She was exceptionally timid, and cried when approached by any of the clinic attendants. At first she could not be induced to play in the examining room, even though left alone there with her mother during her early visits. Investigation of home conditions revealed the fact that the mother was very lonely. She had recently come to this country from Germany and was not acquainted with any of her neighbors. The baby's father was away much of the time, and the lonesome mother habitually clung to the baby just as tenaciously as the baby clung to her.

Teddy also proved to be a difficult child to test, and for a reason quite his own. Whenever the examiner would arrange a series of test materials before him, hoping to record his selection of toys, Teddy would immediately open his arms and would swoop down upon the toys, seizing the entire outfit. This he did again and again. An adherent to the older instinct school of

psychology might have explained Teddy's behavior by saying that he had an excess of the acquisitive instinct. Study of the home situation revealed the fact that Teddy had a three-year-old sister, Jane. No further explanation was necessary; Jane was larger, stronger, and somewhat more aggressive, and Teddy, though smaller and weaker, was fortunately much swifter in his reactions. He learned to match his speed against her strength, and what more natural than to try out his technic in a new situation where toys were to be had?

Some photographs of one baby in a situation which was made as much like the experimental situation as possible are shown in Figure 42. He was friendly and appeared to have confidence in the experimenter, even though the task of climbing over the board proved too difficult for him. In each photograph he seems to be reacting to another person as well as to his immediate task.

For Figure 42, see pages 140-141.

Position in the Family.—In Chapter IX, in discussing factors influencing social attitudes, we have already considered many factors which influence personality. To these, certain experiences within the family should be added. The significance of one's position in the family in contributing to personality differences is often greater than might be supposed.

An *only* child usually grows up in a family environment that is made up entirely of adults. He has many opportunities to learn how to get along with older persons, but few chances to practice getting along with other children. When he does meet other children, on the playground or in school, he is sometimes handicapped because he has not practiced adjusting to his peers. The habits that he has practiced in adjusting to adults are often far from useful when he tries to get along with children. Because they do not know how to get along, when they are first thrown with their peers, only children are sometimes said to be *spoiled*. In many cases the only child does not suffer so much from pampering as he does from a highly significant lack of daily contact with other children.

The *oldest* child in a family group has many experiences which are denied only children. The oldest child often has to give up his position as the baby of the family while still not much more than a baby himself. As other children follow, the oldest child is sometimes deprived of intimate and highly personal relationships with a mother who is so busy caring for her children that she does not find time to spend long periods with each child alone. As he grows older, the oldest child in a family very often assumes responsibility for the care of other children. There are privileges, too, which the oldest child often claims in family groups. Special concessions are made

to him because he is the first-born child. These are but illustrative of the specific adjustments of oldest children and are by no means comprehensive or applicable to all oldest children.

The *middle* child, and by that we mean any children who have siblings who are both older and younger, often occupies a position in the family that is unique. The oldest child has many opportunities to learn how to adjust to children who are younger, but no opportunity in the family to adjust to children who are older. The middle child has an advantage in this respect because he is obliged to learn how to get along with both older and younger children. Sometimes his position is unique in that he is the one who seems to be just right in size and development for many incidental responsibilities for which the oldest child is too old and the youngest child too young. Informal reminiscences of *middle* children who have grown to adulthood often illustrate rather amusingly the "just-rightness" of the middle child. He is often the one who is called upon to leave his play to go on errands. He is just right for wiping dishes in families in which the oldest child is too much occupied with older child affairs and the younger child is too young. He sometimes accustoms himself to a rather neutral atmosphere of adult interest, expecting and asking little in the way of special consideration. While we must, of course, guard against generalizing about the responsibilities which are often placed upon the middle child, it is evident that the middle child occupies a strategic position in the family, if for no other reason than that he has siblings who are both older and younger.

The *youngest* child in a family learns to adjust to children who are older than he, but he is never called upon to make the adjustment that middle or oldest children make when called upon to give up their positions as baby in the family. While youngest children are not necessarily spoiled and dependent, their opportunities to learn ways of adjusting to other members of the family are necessarily somewhat unique.

Various attempts have been made to discover whether certain personality traits could be said to be characteristic of children occupying different positions in the family group. The material for such studies is often gathered from clinic records. The results, in this case, are valuable only in comparing *oldest*, *middle*, *youngest*, and *only* children whose maladjustment has been so acute that they have been referred to a clinic for guidance. A few studies have been made of normal children. A summary of some studies of both maladjusted (problem), children and others is shown in Table IX. The material is included in this chapter for the purpose of stimulating interest in the complexity of personality make up and an appreciation of the manifold factors which influence it.

TABLE IX.—SUMMARY OF STUDIES OF ONLY, OLDEST, MIDDLE AND YOUNGEST CHILDREN

Author	Cases	Oldest	Middle	Youngest	Only
Rosenow	Problem children (clinic)	More than a chance number of problem cases.		Correspondingly few problem children.	
Levy	Clinic cases	Could not generalize except in case of			"Only" boys in wealthy families in small communities. Problems relatively frequent.
Bellerose	Problem children (clinic)				Only slightly greater frequency of food fads and temper tantrums.
Ward	Problem children (clinic)				Lying, stealing, truancy and sensitiveness relatively less frequent.
Goodenough and Leahy	Problem children (clinic)		Possibly less negativistic.		Greatest frequency of negativeness.
Goodenough and Leahy	Kindergarten children	Non-aggressive. Lacking in confidence. Very gullible	Extreme unpopularity most frequent in this group.	No marked characteristics	Most aggressive, most self-confident, great proportion of fondness for demonstration of affection.
Korn	School children		Definitely more stable. Poorest conduct in school.		Definitely better work habits.

From *Family Behavior* by Bess V. Cunningham, pp. 502-503. Reproduced by permission of W. B. Saunders, publishers. The summary is based upon studies reported by G. M. and L. B. Murphy in *Experimental Social Psychology* (published by Harper and Brothers in 1933).

Discipline.—Critics of the modern family are prone to attribute all sorts of personal maladjustments to a lack of discipline in the home. Obviously, parental discipline is of tremendous significance in the development of both well-balanced and distorted personalities. It does not appear that it is so much a lack of discipline that is to be deplored as the kind of discipline to which children are subjected and the relationships which exist between adults and children.

In a study of 40 preschool children, an effort was made to trace a relationship between certain personal characteristics and the type of discipline most often used by parents. Children were rated on a scale for evaluating: *sociability with other children, attractiveness of personality, tendency to face reality, and independence of adult affection or attention*. Parents were interviewed to determine the nature of punishments most frequently used. It appeared that there was a significant relationship between physical punishment and the child's unreadiness to face reality and his dependence upon adult affection or attention. Punishment that was the natural result of the offense was found to be related to attractiveness of personality, a tendency to face reality, and independence of adult affection or attention. The relationship between "whatever type of punishment popped into the adult's head" and sociability with other children, attractiveness of personality, a tendency to face reality and independence of adults was consistently negative, as was the relationship between all but the last of these characteristics and a display of adult temper. A negative relationship suggests that the more often a certain type of punishment was used the lower was the child's rating on certain personality characteristics. These and other results of the study are shown in Table X.

Early Experiences in an Institution.—Indirect studies of the influence of family life on personality are sometimes made by comparing persons who have grown up in families with a matched group of subjects who have spent their early years in an institution. In one such study, two groups of adolescents were compared.⁴ The one group was comprised of 14 girls and boys who, during their first four years, had spent most of their time in institutions, but who were, when the study was made, living in foster homes. They were paired with children of the same age and sex who had been placed in foster homes before they were 21 months old. Numerous tests were given to the two groups. When personality ratings were compared, the children who had spent about four years in an institution were rated *more fearful, less thoughtful, less ambitious, and less capable of sustained effort*. When tested in a situation designed to cause some children to be frustrated, the institution children tended to be apathetic. They differed in other personal

TABLE X.—POSITIVE AND NEGATIVE RELATIONSHIPS BETWEEN METHODS OF DISCIPLINE AND CERTAIN PERSONALITY RATINGS

Method of Discipline	Sociability with other children	Attractiveness of personality	Tendency to face reality	Independence of adult affection or attention
Physical	*	*	—	—
Isolation	—	*	*	*
Natural results	*	+	+	+
Worry	*	—	—	—
Reward	+	*	*	*
Whatever pops into head	—	—	—	—
Temper	—	—	—	*
Penance	*	*	—	*

Note: In the original table results are given in statistical terms; the table has been very much simplified for inclusion in this text. * Indicates a relationship which was not found to be statistically significant.

Adapted from Ayer, Mary E. and Bernreuter, Robert C. "A Study of the Relationship Between Discipline and Personality Traits in Little Children," *J. Genet. Psychol.*, 1937, 50, 165-170.

characteristics, the children who had spent more time in foster homes and less time in institutions seeming to have an advantage.

There are many factors to be considered before studies such as this can be accepted as *proof* of the disadvantages of institutional care from the standpoint of personality. They are, however, highly suggestive of personality needs which seem to be more often met in a small family group than they are in an institution.

A Study of Identical Twins Reared Apart.—As repeatedly suggested, hereditary and environmental factors interact in such a way that it is extremely difficult to separate them. In one of the most interesting of identical twin studies, personality characteristics were compared.⁵ Twin girls were studied at the age of twelve-and-one-half and again at the age of eighteen. The two had been in different homes since they were nine days old. They grew up in homes that were similar in economic status and, up to the age of two-and-one-half years, they saw each other often. They met again, for short periods, when they were eight-and-one-half years old.

The foster family backgrounds of the two differed significantly. A, during her earlier years, traveled widely, while B did not. A went to school irregularly, while B had effective guidance in school. A was disciplined strictly, but B knew nothing but mild discipline. When A was five years old, an own

daughter was born to A's foster parents. When B was seven years old, a second adopted child, just one year younger, was taken into the family. B also had the advantage of the constant companionship of both parents. Irregular schooling, strict discipline, and the presence of an *own* baby in the family characterized A's background; regular schooling, mild discipline, companionship of foster parents and a foster sister near her own age characterized B's background.

At the age of twelve, A and B, in spite of the difference in their school opportunities, rated similarly on intelligence tests. B, however, who had had better opportunities, was more scholarly, rating higher on a group intelligence test and on tests of school achievement. They were similar in play interests; both enjoyed outdoor sports, scout activities, and reading. A did not evidence an interest in dolls and paper dolls, but B enjoyed doll play. The two girls were strikingly alike in certain temperamental and social traits. Both had a history of nail biting, enuresis, and early puberty. They were alike in shape, in their method of hand shaking, and in their speed of writing. On group test ratings that seemed to depend upon physical vitality and non-adaptive irritability the twins were similar.

When studied at the age of eighteen, A, who for the preceding five years had spent a great deal of time outdoors, was larger than B. The twins were different in social and emotional traits. One difference which was recorded was in social attitudes, B showing greater warmth and skill than A in the handling of social relationships.

A SEARCH FOR PERSONALITY TYPES

As early as the fourth century B.C., a curiosity regarding personality types was evidenced. Today, we use the terms *sanguine*, *phlegmatic*, *melancholy*, and *choleric* to designate varieties of human temperament. Hippocrates, it may be recalled, attributed a sanguine disposition to a relatively large supply of blood; an excessive amount of phlegm in the body, supposedly, made a person phlegmatic; black bile was believed to contribute to melancholy and yellow bile to a choleric disposition.

A belief that personality is related to body types, apparently prevailed in the seventeenth century. In Shakespeare's *The Tragedy of Julius Caesar*, Caesar is made to say:

Let me have men about me that are fat,
Sleek-headed men, and such as sleep o' nights;
Yond Cassius has a lean and hungry look;
He thinks too much: such men are dangerous.

Act I, Scene II.

Personality and Body Build.—An interesting and widely quoted theory has been propounded by Kretschmer.⁶ He based his theories upon his observations of insane patients. He concluded that short-legged, fat, and broad-headed persons with long trunks tended, if they became insane, to develop manic-depressive psychoses, while long-legged, short-trunked long-headed, and lean persons, with narrow shoulders and hips tended to develop schizophrenia (*dementia praecox*), if they became insane. He later extended his classification to normal persons, suggesting that the short, fat type of body build which he labelled *pyknic* is associated with genial, friendly, happy, good-natured, objective and realistic behavior, while the tall, lean type of body build (*labelled asthenic*), is associated with a tendency to be shut in, idealistic, romantic and unhappy. He added two other in-between types to make a place for those who would not classify according to either of his two main groups.

A study of constitutional types is occupying the attention of some present day psychologists. Sheldon, who has been studying the problem experimentally for a number of years, has proposed an interesting theory.⁷ There are some persons, he states, in whom the “digestive tract is king”; these are persons whose viscera are massive and whose somatic structures are relatively weak or undeveloped. A second group he characterizes according to their upright and sturdy build; these are persons whose somatic structure—bones, muscles, and connective tissue, predominate. In a third group he classifies persons who are fragile in build—linear, or long, flat-chested and delicate. His experiments suggest that certain groups (clusters), of traits are associated with the three types. With the first type he associates sociability, conviviality and gluttony for food, for people, and for affection. With the second type he associates a predominance of muscular activity, vigorous bodily assertiveness, an assertive posture, direct manner, and an unrestrained voice; such persons seem to need action when troubled. With the third type he associates restraint, a tendency to shrink from sociability, a tendency to avoid attracting attention, and a need for solitude when troubled. Sheldon’s research is still going on.

What we shall learn about constitutional factors influencing personality, after many more years of questioning, theorizing, and testing theories we, of course, do not know. The significance of endocrine therapy in relation to behavior has been recognized for some years, but more remains to be discovered than has already been brought to light. Just how persons who are thought to be constitutionally different might respond to endocrine treatment may one day be demonstrated. We can be sure that whatever remains to be discovered about constitutional factors influencing personality will indi-

cate that while constitutional factors may *influence* personality, they do not *determine* personality.

Introvertive and Extrovertive Tendencies.—There is no classification of personality types which is better known than that proposed by Jung, a Swiss psychiatrist.⁸ Jung has proposed a twofold classification, *extrovert* and *introvert*. The terms are used rather glibly today by some lay persons who have only a partial idea of what the classification implies. An extrovert is believed to be a person who is active and outgoing in his reactions; he is influenced by social considerations and is a “man of action”. So far, so good. An introvert, on the other hand, according to a popular misconception, is a maladjusted person who has an “inferiority complex” and who tends to withdraw from social activities. According to Jung’s theory, an introvert is a person who is more interested in ideas than he is in social activities; he is deliberative and thinks in terms of his own reactions to the world around him, while an extrovert is governed more by social values.

In the light of what is known about the importance of activity in working off tensions, we can see why it is that some persons who have introvertive tendencies become maladjusted, and why it is that a person who is not in the habit of mulling things over is more likely to find a speedy relief from temporary tensions. If given a test of *introversion-extroversion*, many maladjusted persons would undoubtedly be found to tend toward the introvert side of the classification. On the other hand, all persons who show a predominance of introvert tendencies are not maladjusted. All of the great thinkers of the world and all of its creative artists are persons who like to deliberate. They work alone; otherwise they could not be creative.

It is possible for a person to be introvertive in his *interests* without being shut in, as far as his emotional reactions are concerned. He may view the social scene from the sidelines, not because he is in any sense maladjusted, but because he is more concerned with what he is thinking about than he is with the activities of his immediate associates.

According to Jung’s classification, the contrasting characteristics of an extrovert and an introvert are varied. The extrovert, for example, tends, in his conduct, to be governed more by what is expedient, while an introvert is more inclined to be governed by standards. A person with extrovert tendencies is likely to be neglectful of ailments, while an introvert tends to pay undue attention to his ills. In case of the development of maladjustment, the extrovert is inclined to fall back upon compensating adjustments, while the introvert is inclined to adjust by withdrawing.

So far, we have considered extrovert and introvert tendencies as if there were but two classifications and all persons must classify one of two ways

as suggested in Figure 43-I. We know from a study of the distribution of all sorts of human traits that we cannot divide normal persons into two groups, no matter what characteristics we may be considering. To remedy the difficulty which was encountered, in trying to fit all humanity into either the extrovert or the introvert group, a third classification has been proposed, a middle group labelled the ambivert group, as indicated in Figure 43-II. Numerous tests of reactions of many persons to tests of extroversion-introversion indicate that extrovert and introvert tendencies appear to be distributed as other traits are distributed, according to the normal curve as shown in Figure 43-III.

When tests are given to selected groups of persons such as the insane or alcoholics, more exaggerated tendencies to extroversion or introversion are to be found than in the population at large. In one study, two groups of psychotics, manic-depressive and schizophrenic, were compared with two control groups, one consisting of medical students and one consisting of clinic patients.⁹ The manic-depressives, as a group, tended to be extroverted according to tests; schizophrenics tended to be introverted. Both control groups showed a normal distribution of the traits.

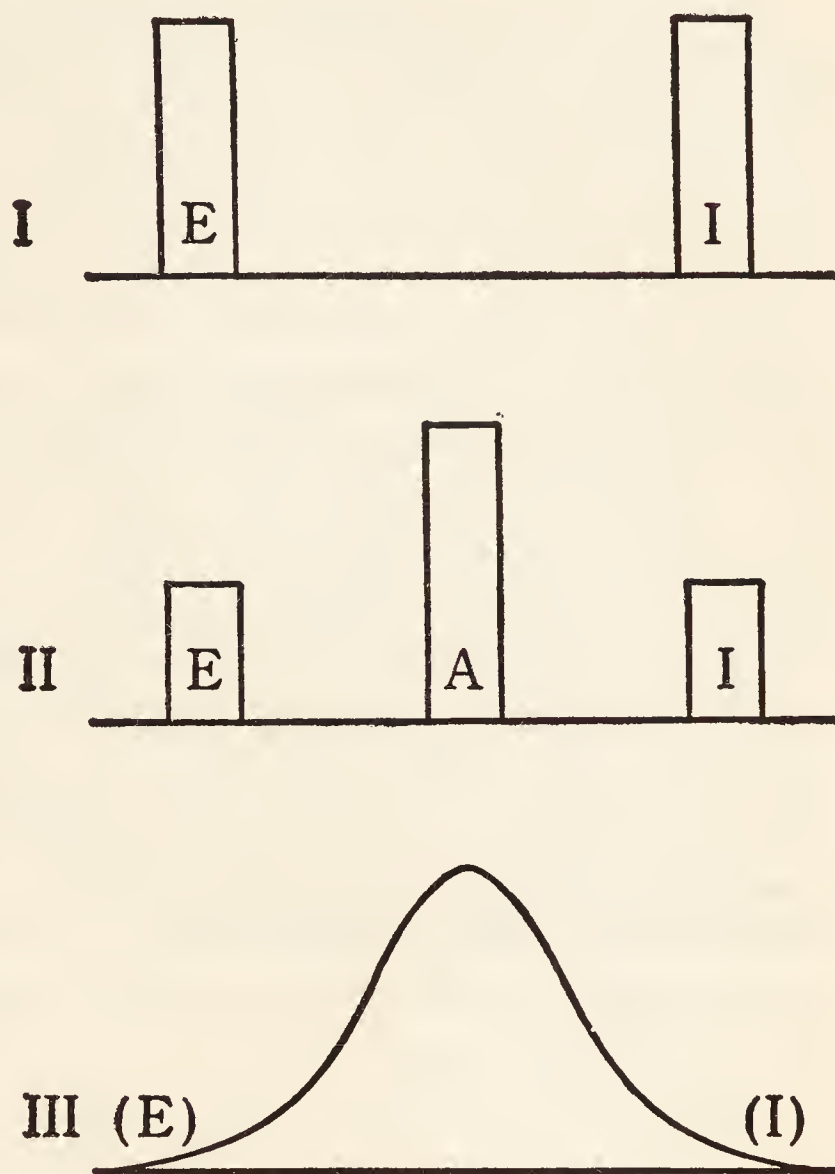


FIG. 43.—CONCEPTS OF PERSONALITY TYPES AND TRAITS

I indicate the incorrect conception that all people are of one type or another, as introverts and extroverts. II is a compromise that places the class of "ambiverts" between. III shows the nature of a continuous distribution, with no gaps, most people near the center, and smaller numbers toward both extremes. (From Shaffer's *The Psychology of Adjustment*, Houghton Mifflin Company, Boston.)

CHANGING PERSONALITIES

Jung's theory of personality types does not make much provision for radical changes in personality. Suppose that, instead of extrovert and introvert tendencies, we were to consider less complex characteristics such as a tendency to be glum or to be cheerful. If a person is relatively glum about three-fourths of the time and relatively cheerful the remaining fourth, does it not seem probable that he could shift the balance so as to become a little less glum and a little more cheerful? Would he be helped by having cheerful companions and an opportunity to make a success of his daily achievements? We should certainly expect him to become more cheerful under such conditions. Suppose, on the other hand, that another person tended to be cheerful more often than he tended to be glum. If we were to surround him with mournful companions and were to restrict him in his attempts to be successful, we can be sure that we should be able to make him somewhat less cheerful. Tendencies to be relatively extroverted or relatively introverted would seem to be modifiable, at least to the same extent that cheerfulness or glumness, optimism or pessimism, irritability or calmness, and other temperamental characteristics are modifiable. If a person were guided from childhood into habits of deliberation, on the one hand, or habits of social responsiveness, on the other, we do not know to what extent his tendencies might be directed toward introvert or extrovert habits.

We know that we can and do make changes in our personality. The very nature of personality makes change inevitable. Sometimes changes occur without deliberate intent, as in the case of student nurses during the early weeks of their training. Two groups of student nurses, at the end of the first twelve weeks of training, in taking an English examination, were asked to write about some of the ways in which their personalities had changed. A few of the replies may prove suggestive and interesting.

When I arrived at the hospital on June 9, 1944, I found myself very much excited. The excitement was soon gone, when I found myself alone with no friends. Here, at this time, I believe my personality changed a little for the better. Always before I was backward, but here I decided, if I were ever going to change my disposition, this was the time. I found it easy to make friends, for the rest of the girls wanted friends too. In high school I found myself with the same two or three girls. I find now, it is nicer to be with all the girls, and not just a certain one or two friends.

My personality has changed in various ways since I entered training. When I first came into training, fresh out of high school, I thought that I knew at least the fundamentals of almost everything there was to

know. It didn't take more than a few days for me to find out that what I knew could be placed in a pinhead, compared to what I didn't know. This shocking discovery toned me down a great deal and changed me to a more quiet and reserved person than the cocky one of before.

Twelve weeks ago I entered training as a young, timid, frightened girl straight from the country. I had never been to the city much before, and all the people and excitement rather baffled me. My first change in personality was to learn to use my voice a little more in gaining information. I have gained a lot more confidence in myself. The experience of being away from home has made me feel more grown up, due to the fact that I can't depend upon my folks everytime I have a little problem to solve. Yes, I'm sure that my personality has changed in many ways. In most cases the changes will help me in adjusting myself to my new career.

Last Monday night after I had finished my studying, my friends wanted me to go to the movie. I would rather have taken a nice long walk, because I had been sitting all day. Since majority overrules, I went to the show. This is just a little example which illustrates that I have learned to give in. If that had been four months ago I would have quickly and very abruptly refused. This is September 1, 1944, and in the past three months I have begun to think about other people's pleasure. It makes me so much happier to be able to help people. Before I came down here, I had a little motto "God helps those that help themselves." I have changed my mind.

SUMMARY

Every characteristic of a person which makes him *stand* out as someone who is not like anyone else contributes to his personality. Personality implies individuality or *uniqueness*. Physical and intellectual characteristics, emotional reactions, motives, and attitudes must all be taken into account in studying personality.

Personality does not flourish in a vacuum. It should be considered in terms of person-to-person relationships. It is a person's *social stimulus* value, or the way in which he causes others to react to him; it is everything that enters into a person's attitudes toward himself and toward others.

Personality is, to a large extent, a product of experiences in the family. Hereditary factors influence its development but first-hand contacts direct its growth.

Experiences during the first year of life appear to have a far-reaching effect upon habits and attitudes which are to characterize a person in later life.

Position in the family contributes to each person's uniqueness. The opportunities of the oldest child are not the same as those of the youngest child in the family. Middle children, who live with brothers and sisters who are both older and younger have certain experiences which only a middle child can have. The life of an only child, who is deprived of intimate experiences with other children, is necessarily somewhat unique.

The way in which children are disciplined seems to contribute either positively or negatively to characteristics such as sociability, attractiveness, tendency to face reality and independence of adults.

Children who spend their early years in an institution appear to have certain characteristics which are different from those of children who have grown up in a family group.

Identical twins who were separated in early infancy and reared in foster homes were unlike in social and emotional traits and similar in traits that depended upon physical vitality and non-adaptive irritability.

For many years an effort has been made to classify persons into types. Hippocrates, in the fourth century, B.C., proposed a theory of types. Kretschmer, and later Sheldon, have presented theories of personality based upon differences in constitutional types.

Research is still in progress, but the possibility of discovering true personality types is studied as an open question, with emphasis upon constitutional factors which may *influence* but not *determine* personality.

There is no theory of personality types which is better known to the layman than Jung's theory of *extrovert* and *introvert* types. An extrovert is, typically, according to Jung, a person who is objective in his attitudes and governed by whatever is expedient. A typical introvert is subjective and is governed by standards and principles. As the terms suggest, the one *turns out* while the other *turns in*.

The layman tends to believe that a person who has introvertive tendencies is maladjusted. That such is not necessarily the case is indicated by the happy adjustments of many poets, philosophers, inventors and other persons who enjoy contemplation.

It does not appear likely that any one person is either a pure extrovert or a pure introvert. If the two types are considered as theoretical extremes, it is probable that tendencies toward extrovertive behavior on the one hand or, on the other hand, toward introvertive behavior are distributed very much as other human traits are distributed, according to the *normal probability* curve.

Exaggerated tendencies to extrovertive or introvertive behavior are to be found among the insane or alcoholics.

Tendencies toward either extreme, under normal conditions, seem to be subject to guidance. It is possible to encourage both social responsiveness and deliberation in childhood. It is safe to assume that introvertive or extrovertive behavior can be modified.

Since personality is dependent upon every individual characteristic it is apparent that a change in any one trait involves a changing personality.

SUGGESTED ACTIVITIES

1. Discussion.

(1) Character is judged to be good or bad, according to the standards of the group in which one lives. Character is one aspect of personality. Is it possible for a person of bad moral character to have many good personality traits? Illustrate. May a person of good moral character have undesirable personality traits? Illustrate.

(2) Compare two student nurses. Both are of excellent character, both are pleasing in appearance, conscientious and dependable. One is impulsive and self-forgetful in her social relationships, while the other tends to be rather shy. Can you say that the personality of one is *better* than the personality of the other?

(3) What might you do to help a shy child to be less shy? How might you help an impetuous person to be less impetuous?

(4) In terms of actual procedures in caring for patients what does it mean to "respect personality".

(5) Illustrate "respect for personality" in as many aspects of your professional and private life as you can.

(6) Illustrate how an attempt to classify persons into types might make you respect personality less.

2. Committee Activities.

(1) In a small group, agree upon a person to whom each member of the group is to react. Select someone whom you know fairly well, but let it be a person with whom you are not intimately associated. Record your reactions to him, following the outline below.*

(a) Physical characteristics, such as gait, vitality, impulsiveness, etc.

(b) Intellectual traits such as capacity for thinking and imagination.

(c) Aptitudes such as musical or mechanical ability.

(d) Dynamic factors such as ambitions, purposes, and emotional make-up.

(g) His attitudes toward: himself, other persons, duty, obstacles, property, and toward larger social issues.

* Adapted from an outline by Dr. Clarence Leuba, in "An Outline for the Systematic and Comprehensive Study of a Personality," *J. Appl. Psychol.*, 1943, 27, 61-64.

Compare notes to see to what extent personal impressions may vary. If you differ among yourselves, in reacting to the person, can you say that one of you is right and another wrong? Does this experience help to clarify what is meant by *social stimulus* values?

(2) To study the other aspect of personality, the way a person reacts to the world around him, have each member of the committee try to describe herself, using the same outline. Have all the descriptions read aloud by one member of the group and try to identify each student nurse. Does this experience suggest that you know much or little about yourself?

(3) Have each member of the committee listen to the same radio program. Select a quiz program so that you may have an opportunity to react to a number of different persons. Compare notes on *outstanding* characteristics of certain persons. Does this experience help you to see that we tend to react to certain few outstanding characteristics rather than to the whole person?

3. **Notebook suggestion.** With the traits of a good nurse in mind write down some immediate goals for yourself. After you have written them, turn to *Notebook suggestions* at the end of Chapter II and the entry which you made at that time in your notebook. Record indications of your progress. In what ways can you see that your personality has changed?

SUGGESTED READING

Hartman, George W. *Educational Psychology*, New York: American Book Co., 1941.

Chapter XII, "The Improvement of Character and Personality," contains concrete suggestions and interesting illustrative material.

Leuba, Clarence. "An Outline for the Systematic and Comprehensive Study of Personality," *J. Appl. Psychol.*, 1943, 27, 61-64.

An excellent outline for a complete study of personality.

Muse, Maude B. *Psychology for Nurses*, Philadelphia: W. B. Saunders Co., 1945 (Revision).

Read Chapter III for a general discussion of personality and applications to nursing.

Nagge, Joseph William. *Psychology of the Child*, New York: The Ronald Press Co., 1942.

Read Chapter IX for a summary of studies of personality in childhood.

Shrodes, Caroline, VanGundy, Justine, and Husband, Richard W. *Psychology Through Literature: An Anthology*, New York: Oxford University Press, 1943.

Read selections from section on "Personality Adjustment and Maladjustment."

- ¹ THORNTON, G. R. "The Effects Upon Judgments of Personality Traits of Varying a Single Factor in a Photograph," *J. Soc. Psychol.*, 1943, 18, 127-148.
- ² ——— "The Effects of Wearing Glasses Upon Judgments of Personality Traits," *J. Appl. Psychol.*, 1944, 28, 203-207.
- ³ AYER, Mary E., and BERNREUTER, Robert C. "A Study of the Relationship Between Discipline and Personality Traits in Little Children," *J. Genet. Psychol.*, 1937, 50, 165-170.
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- ⁵ BURKS, B. S. "A Study of Identical Twins Reared Apart Under Different Types of Family Relationships," In McNemar, I., and Merrill, M. A., (Ed.), *Studies in Personality*, New York: The McGraw-Hill Book Co., 1942, 13-34.
- ⁶ KRETSCHMER, E. *Physique and Character*, New York: Harcourt Brace and Co., 1925.
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- ⁹ NEYMAN, C. A., and YACORZYNSKI, C. K. "Studies of Introversion, Extroversion and Conflict of Motives in Psychosis," *J. Genet. Psychol.*, 1942, 27, 241-255.

Chapter XIII

MEASURING ASPECTS OF PERSONALITY

It is sometimes said that the things which we value most in life cannot be measured. We undoubtedly place a high value upon personality. Can personality be measured? As we have just observed, personality includes every characteristic of an individual which makes him unique. His intelligence is obviously an important factor. His special aptitudes and interests make him stand out in his group. His attitudes toward himself are most significant. His temperament, or disposition, contributes to his uniqueness. Social habits and attitudes have a great deal to do with making of anyone the kind of person he is. His ability to adjust to stress and strain is highly significant. Vocational interests contribute to his individuality.

Traits such as these can be measured, but when we add the results of all such measurements, we are far from having a picture of any one individual's personality. Personality cannot be measured in terms of so much of this and so much of that. We cannot measure it as we measure height and weight. All that we can hope to do is to measure traits and groups of traits, knowing that we cannot measure personality as a whole. Measures of the various aspects of personality may be compared to snapshots of an individual taken from different angles. Each snapshot is of some value and many snapshots from many angles are of more value than is one in letting us know what the subject of the pictures is like.

TESTS OF INTELLIGENCE

Intelligence is generally designated as *capacity for learning*. It is exceedingly complex in nature and is not readily defined in simple terms. In viewing intelligence as an aspect of personality, a consideration of what is meant by *intelligent behavior* will, perhaps, be more valuable to the student nurse than an attempt at a technical definition of what the term *intelligence* implies.

Intelligent Behavior.—There is no one way of behaving which is characteristic of an intelligent person. To be considered intelligent, or bright, a person must react on a relatively high level to many and complex situations.

A very intelligent person can solve harder problems than one who is relatively dull. As a rule, he can solve easy problems more quickly than a duller person can. The more intelligent a person is in his adjustments, the more use he makes of the knowledge that he has at his disposal. A bright person recognizes resemblances and finds patterns in complex relationships more readily than one who is dull. Originality and resourcefulness are characteristics of intelligent behavior. When confronted by a problem an intelligent person is able to improvise in working out a solution. There are other characteristics of intelligent behavior, too numerous to be listed here. It is, for example, intelligent to concentrate upon problems instead of letting oneself be easily diverted. It is also intelligent to read or follow directions carefully in many situations.

The use of available knowledge, or, to state it somewhat differently, evidence of being able to profit from experience, is accepted as one very good indication of intelligence. We can illustrate the difference between behavior which is considered intelligent and less intelligent behavior if we compare ourselves with men and women who lived before the days of medical science. At one time both intelligent and unintelligent persons believed that incantations and charms could cure disease. It was not unintelligent to accept this belief, at the time, because facts about scientific cures were lacking. Today, a person who subscribes to such a belief, in spite of present day knowledge, is behaving unintelligently as far as his belief in incantations and charms is concerned.

Nature of an Intelligence Test.*—In the development of intelligence tests, it has been assumed that mental tests measure native, or inherited, capacity for learning. To measure a person's capacity for learning, it is necessary to subject him to all sorts of test situations in which he can show what use he has made of his opportunities to learn. A test is ill-suited to a person unless he has had ample opportunity to acquire the knowledge, and practice the habits necessary to make a correct response. A problem about the comparative values of superstition and science, for example, would tell us nothing about the intelligence of a man who had been brought up on superstitions and had never heard of science. A test involving reading and arithmetic would not differentiate well between more and less intelligent six-year-olds, because the majority of children of this age have not had the opportunity to master such skills. In a test designed for twelve-year-old

* Students who expect to work with children in groups, as teachers, school nurses, or participants in public health programs will find the next few pages especially significant and helpful. Others may, if desired, turn to *Uses of Intelligence Tests* on page 281, without losing the thread of the discussion.

children, however, simple reading and number problems could be included in an intelligence test without handicapping the average child. Test situations are designed to fit the *average person* of the particular group for which the test is devised.

A person whose opportunities to learn have been very far below average might, because of his inferior background, be at a disadvantage in taking a test that is planned to fit the person of average background. On the other hand, one who has had an unusually rich background might have an advantage in taking a test which is suited to the average person in his group.

Much of the controversy about the relative influence of heredity and environment on intelligence is actually a controversy about what the intelligence test tests. There is general agreement that a well chosen intelligence test is useful as a fair measure of the learning capacity of the majority of subjects in the groups to which it is adapted. It is also generally agreed that, in some instances at least, we are not justified in concluding that we are measuring *native capacity* to learn. Regardless of whether mental tests do or do not measure native capacity to learn they do serve to suggest how intelligently a subject may be adapting to his environment, because intelligence tests measure some of the abilities that enter into successful adaptation to everyday living. They aim to measure a person's "general intelligence", or, to put it another way, to measure his general tendency to react intelligently in many and varied situations. No one test item is of much value in and of itself, and no single ability is evaluated. Subjects are rated on their total score.

Individual Tests.—Individual intelligence tests which have been most widely used and best standardized are revisions of a scale first used in France, the *Binet-Simon Scale of Intelligence*. A tentative form of this scale, which was first published in France in 1905, has been revised and extended several times by American psychologists. The forms which are best known are the *Stanford Revision of the Binet-Simon Tests*, which was widely used between 1916 and 1937, and a later revision, published in 1937, known as the *Revised Stanford-Binet Intelligence Scale* or the *Terman-Merrill Revision*. Some test items adapted from the two American revisions just mentioned suggest the nature of the test. Children between the ages of two and four are asked to respond to such problems as the following: build a tower of four or more blocks after the examiner has shown how the tower is made; give the family name; obey very simple commands; point to a doll's hair, mouth, ear, and hand; identify, in pictures, simple objects such as a clock, a bed and a house; count four pennies and point to each as it is counted. It is to be noted that test items such as these are measures of learnings which

are common to most children between the ages of two and four in environments such as most young children have.

We note a similar emphasis upon everyday learning in certain test items which appear in tests for older children, such as: telling ways in which an apple and a peach are alike; telling the difference between a fly and a butterfly; explaining what is happening when first a doctor, then a lawyer, and then a minister visits a house; giving definitions of words; and reading mixed up sentences.

Performance tests, which require the subject to manipulate objects, have been devised to evaluate the intelligence of persons who cannot understand, speak, or read the English language. One such test is the *Knox Cube Test*. This is an old test which has been used in testing immigrants at Ellis Island. In this test the examiner taps a series of four cubes in various sequences, and the subject, after watching the examiner, is supposed to repeat the performance. There are many possible sequences in which the cubes can be tapped, for example: 1, 2, 3, 4, 3; 1, 3, 2, 3, 4; or 1, 4, 3, 1, 2. This test was included in an early performance scale which was used with children and with adults who were suspected of being dull.¹ Another test in this series is the *Manikin Test*. It consists of flat wooden pieces (head, arms, legs and trunk), which the subject is to assemble to make a man. In this same series, several form boards are used. These are boards from which certain geometric figures such as a circle, star and oblong have been cut out. The board and scattered figures are given to the subject, who is asked to fit the figures into the holes.

A recent test which uses blocks in different patterns is pictured in Figures 44A and 44B.

Army Group Tests.—Group tests of intelligence have been used in the United States since the first World War. The draft sent many thousands of men into the army. These men came from all parts of the country and from all occupations. Some were highly competent men, who were capable of becoming officers; others were entirely incompetent and incapable of fitting into the routine of army life. To make a speedy selection of the most able men and to eliminate the totally unfit, it was necessary to devise some means of testing large numbers of men at the same time. A group of psychologists, pooling their efforts, developed the Army Tests. These tests were given to more than one and a half millions men. One test, the *Army Alpha*, was given to all literate, English speaking men. It is what is known as a *verbal* test because it necessitates a knowledge of the English language. To test those who could not respond to the verbal test, a non-language test, known as the *Army Beta*, was devised. No knowledge of English was nec-

essary, because the tests were suggestive of what the subject was supposed to do, and the examiner was able to give directions by means of gestures and demonstrations on a blackboard.

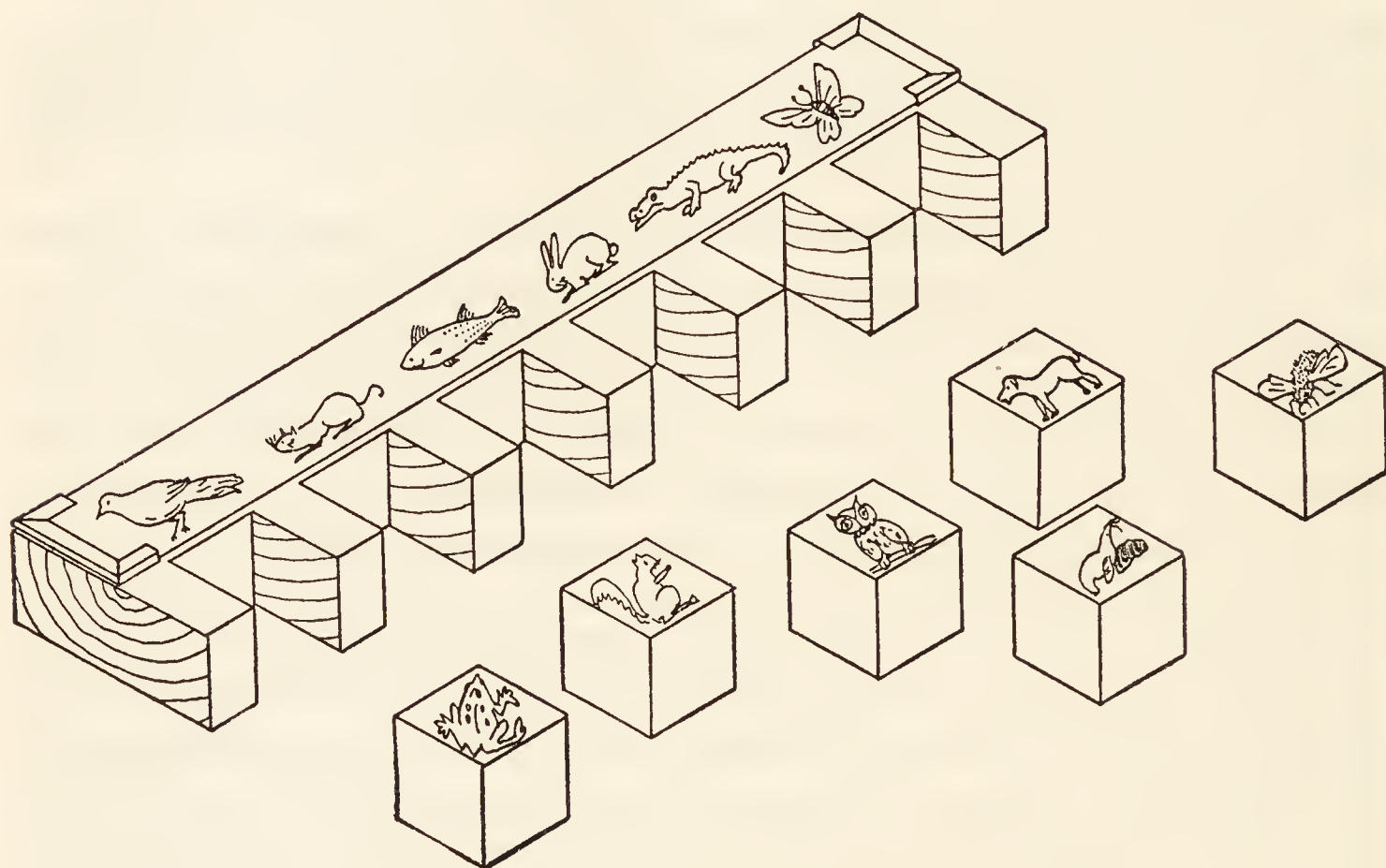


FIG. 44A.—TEST XII-4 CLASSIFICATION OF ANIMALS.

(From The Leiter International Performance Scale)*.

The nature of the test items included in the two forms of the army test is suggested in the material which follows. (Because, in any intelligence test situation, the subject is supposed to be meeting the material for the first time, it is not desirable to make direct quotations from adult tests that are in current use. Since the Army Test has served as the basis of many tests which are in use today, illustrative materials used in reference to this test are, therefore, adapted and not reproduced directly.) The *Alpha* test includes: tests of the subject's ability to follow directions; a number of arithmetic problems which are scaled from very easy to very hard; tests of common sense or practical judgment; a vocabulary test, based upon a recognition of sames and opposites; sentences disarranged; numbers in different types of pattern sequences (see p. 132 of this text); analogies, and tests of information.

* Russell G. Leiter, *The Leiter International Performance Scale*, Vol. 1, Directions for the Application and Scoring of the Individual Tests, page 66. (Santa Barbara State College Press, 1940.)

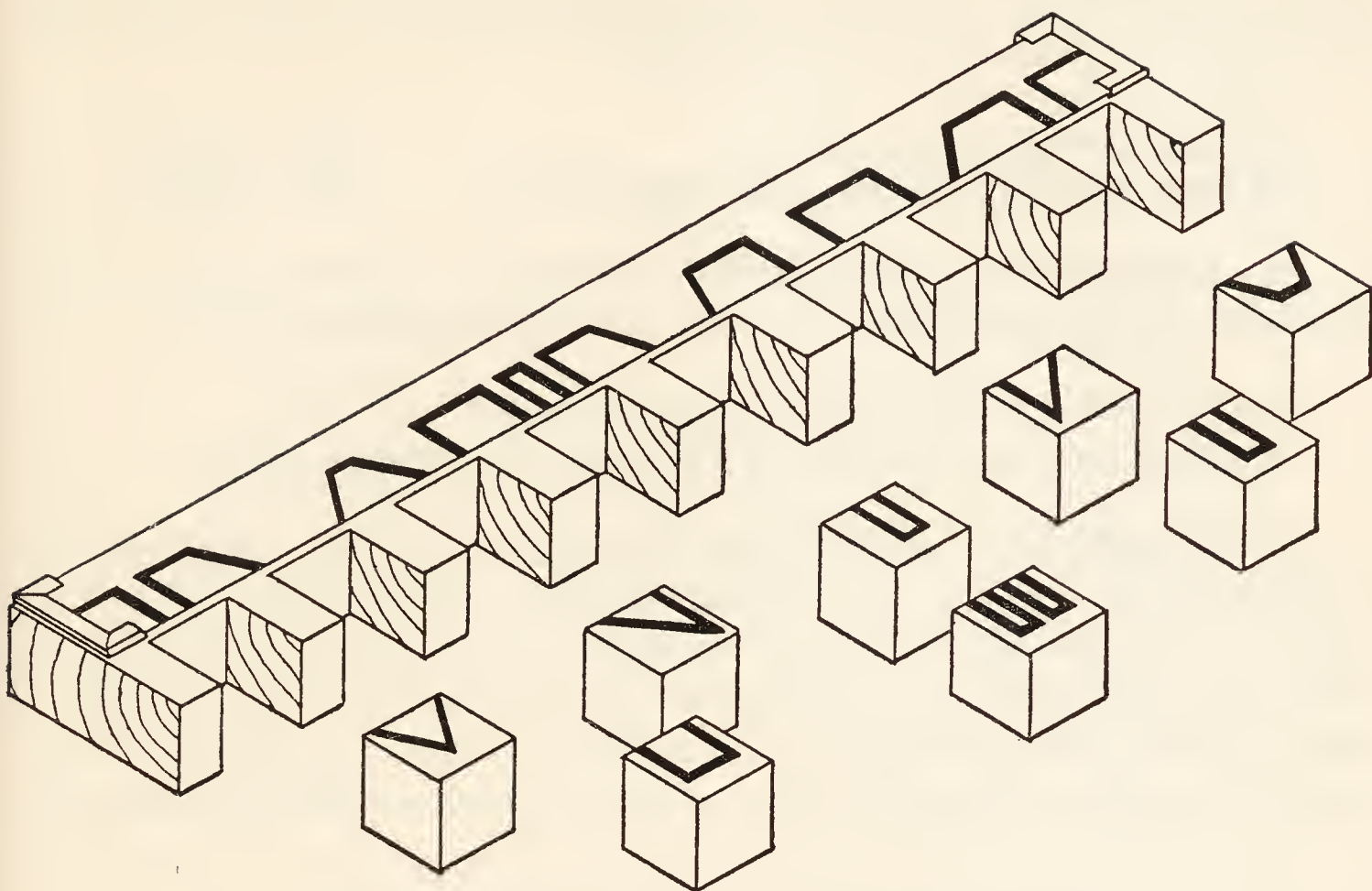


FIG. 44B.—TEST IX-4 LINE COMPLETION.
(From The Leiter International Performance Scale)*.

The following are illustrative of tests of common sense or practical judgment. In each of these, the subject is to indicate the one best answer. The series begins with a very easy problem such as:

Why are army blankets made of wool?

Wool is cheaper than cotton.

Wool is warm.

Wool is hard to tear.

Why should people buy war bonds in time of war?

Everybody needs bonds.

You should invest in Uncle Sam.

The Government needs extra money to carry on the war.

The scrambled sentence test is one in which the subject must read the sentence as it would read if the words were in the correct order. As an evi-

* Russell G. Leiter, *The Leiter International Performance Scale*, Vol. 1, Directions for the Application and Scoring of the Individual Tests, page 53. (Santa Barbara State College Press, 1940.)

dence of his ability to do so, he must underscore *true* or *false*. Test items of this type are illustrated by the following:

sleep men usually happy well	True	False
rise hear when immediately taps soldiers they	True	False

The analogies test is one which has been used in various forms in many published tests of intelligence. A sample of an analogy test follows:

carrots—*rabbit* :: seeds—*flowers* cats birds fish
 hardship—*comfort* :: ugliness—*strength* beauty health wisdom

The *Beta* test for non-English speaking or illiterate men consists of performance tests on paper. The subject could not manipulate actual objects, because the purpose of the test was to measure many men at the same time. One test in the series is a maze which must be marked with a pencil to show a direct route from the point of entrance to the exit. Figure 45 illustrates the nature of a maze test as it is used in paper and pencil, group tests.

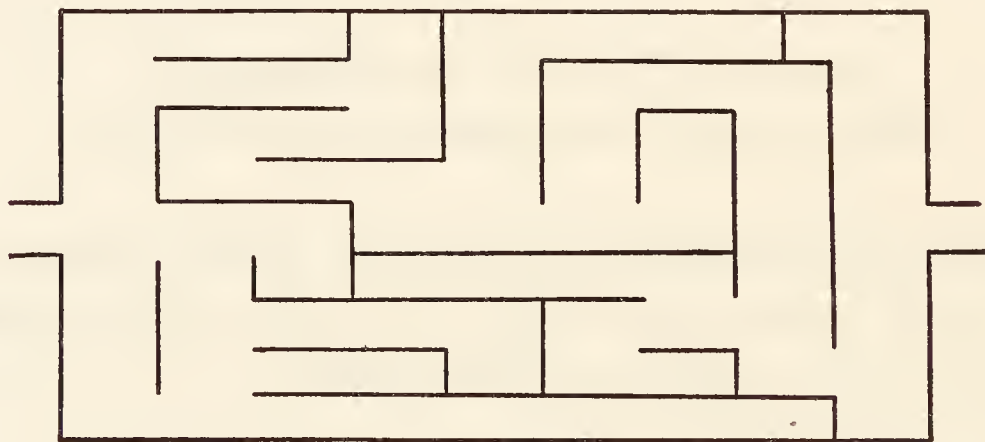


FIG. 45.—MAZE.

An ingenious test which necessitates ability to recognize the fact that certain hidden blocks must be taken into consideration, is illustrated in Figure 46. The subject is asked to indicate how many blocks there are in each figure. To answer, he must count the hidden blocks as well as those that are visible.

Later Group Tests.—Group tests for adults and older children, in common use today, are not unlike the *Army Alpha*. They consist of booklets, containing a wide variety of test items. There is usually one set of questions or problems testing vocabulary. This is often a *same-opposites* test. *Analogies* are used frequently, as are tests of *common sense* or practical judgment. Tests for children are in some respects similar to the *Army*

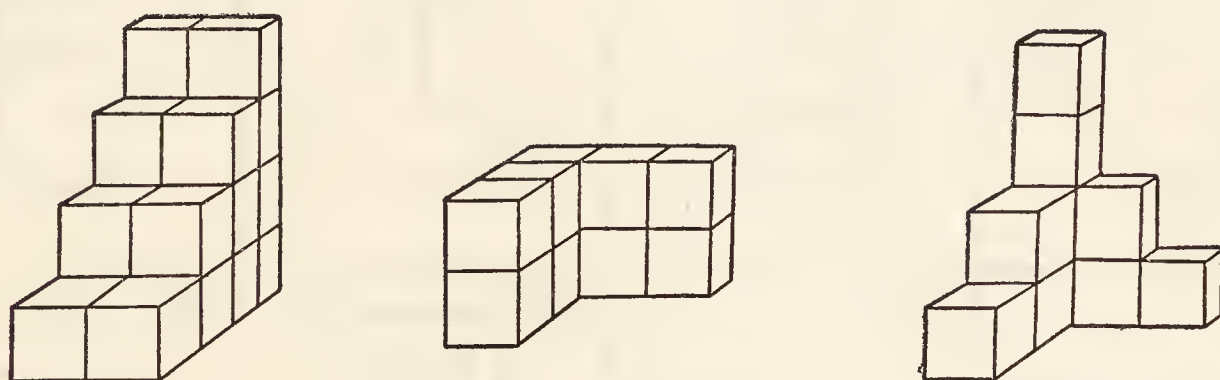


FIG. 46.—BLOCK DRAWINGS.

Beta, in that there are usually a number of pictures which are to be checked in various ways. In many test items, the subject is called upon to recognize belongingness or relatedness. In Figure 47 a test of belongingness, which is used successfully with children in the kindergarten and primary grades is illustrated. In the test items illustrated, children are asked to find, among the scattered pictures at the right those which belong to the picture at the left. A test of children's ability to generalize is illustrated on page 157 of this

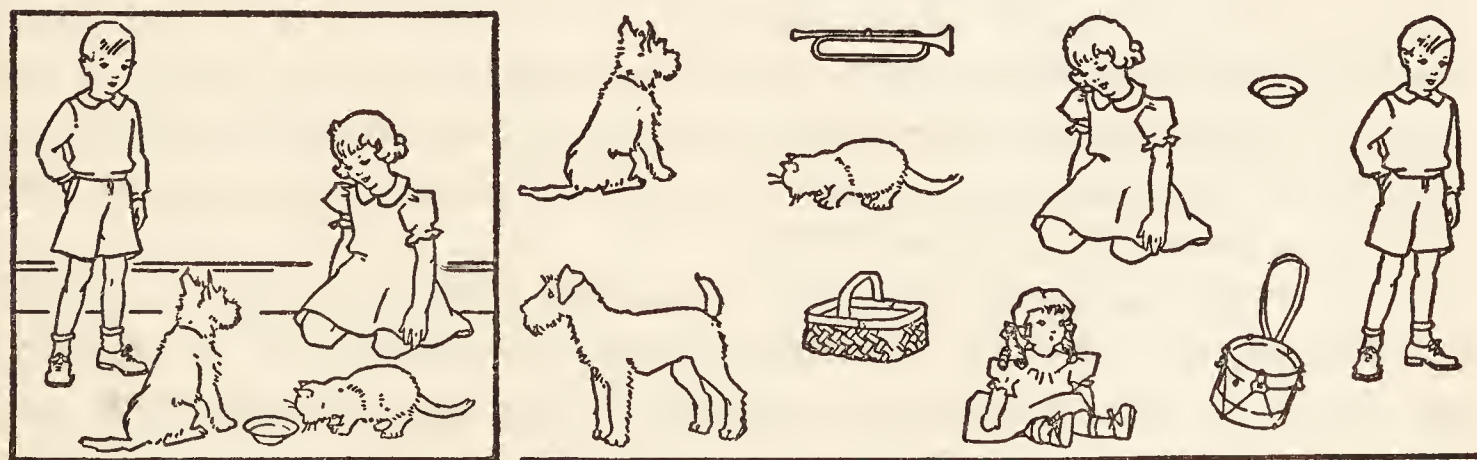


FIG. 47.—PART-WHOLE RELATIONSHIPS.

(From *Pintner-Cunningham Primary Test: Form B*. Copyright, 1939, by World Book Company, Yonkers, New York. Reproduced by written permission.)

text. A procedure which has often been used in mental tests is recognition of missing parts. This is illustrated in Figure 48 which is from a test designed for primary children.

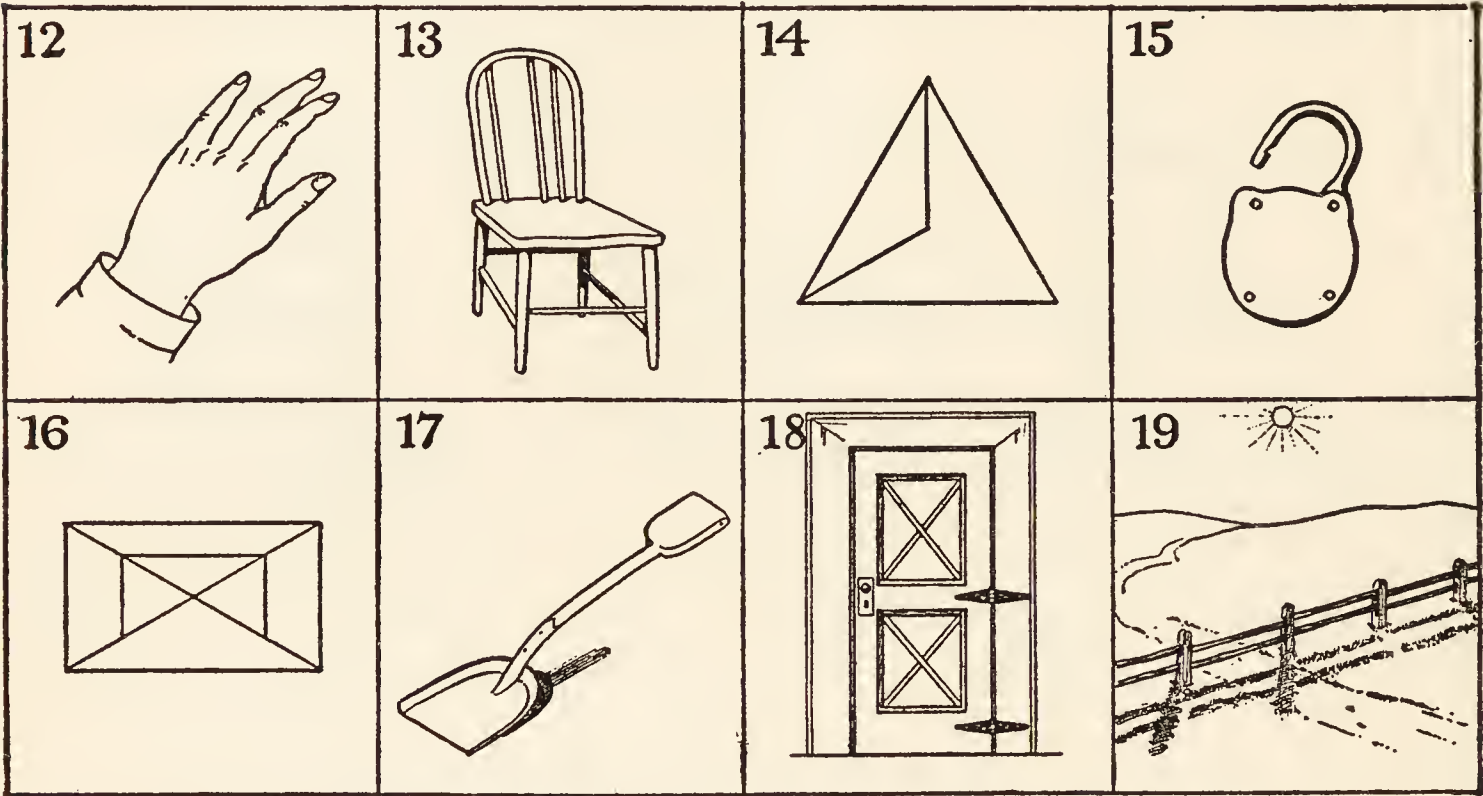


FIG. 48.—OMISSIONS.

(From Baker, *Detroit Advanced First-Grade Intelligence Test*. Copyright, 1928, by World Book Company, Yonkers, New York. Reproduced by written permission.)

Items which are selected for inclusion in a test series are included because they have been tried out and have been proved to be significant in contributing to the total series. After a test item has been found to be significant, it is included in the test only tentatively. When a number of items which have proved to be discriminating have been selected, they are combined into a *tentative* booklet and the test is given to many subjects. The final *standardized* test series is the one which has been found to be useful as a discriminative instrument, after it has been tried out with many hundreds of subjects, representing all economic classes, in all parts of the country, in rural and in urban districts.

Most student nurses have become acquainted with some type of college aptitude test. One of the tests which is given in many schools of nursing, prior to admission or very shortly thereafter, is an aptitude test. This test serves, in the hospital school, much the same purpose that a test of intelligence serves for school children, although the student nurse is never given an IQ rating on such a test. The student will recall that she made a number of different types of response in taking the aptitude test. No one item in the

test is used as a measure of intelligence or of aptitude. In all tests it is the sum total of scores or the total score on groups of responses upon which a rating is based.

Mental Age and IQ.—After a test has been given to many subjects, it is possible to state what score is to be expected at a given age. The average score made by children of a certain age constitutes a *mental age* norm. It is to be compared with *average* height or *average* weight at various ages, as we find height or weight in tables of physical growth norms. If, for example, the average child of ten made a score of 50 on a test, and the average eight-year-old child made a score of 40, a score of 50 would give any other child a mental age of 10, and a score of 40 would give him a mental age of 8. A mental age rating is no more permanent than a child's height or weight.

In the light of widespread programs of mental testing, it has been concluded that growth in mental age does not continue indefinitely. Just as a child ceases to add to his height, he, presumably, ceases, at one point, to grow in mental age. This means that added years of life, after a certain age, do not give the average person an advantage, *when he takes an intelligence test*. The age at which mental age rating reaches a maximum is believed to be between fourteen and sixteen in the case of the average person. The dull, apparently, stop growing in mental age earlier than the average, and the feeble-minded still earlier. Superior persons, on the other hand, continue to grow in mental age longer than the average.

When an eight-year-old child attains a mental age of 10, on an intelligence test, the indication is that he is growing mentally at an accelerated rate. If a ten-year-old child attains a mental age rating of 10, the indication is that his rate of mental growth is just normal for his age. If, on the other hand, a child of twelve should attain a mental age rating of 10, a relatively slow rate of mental growth is indicated. The eight-year-old, the ten-year-old and the twelve-year-old, in this case, all have mental age ratings of 10; they are at the same level in their ability to deal with abstract problems. The child who, in eight years, has attained a mental age rating of 10 has presumably grown at the rate of 1.25 years for each year that he has lived. The child, who in ten years, has attained a mental age rating of 10, has grown at the rate of 1.00 year of mental age for each year of chronological age. The child who, in twelve years, has attained a mental age of only 10, has presumably been growing at the rate of .83 of a year for each year that he has lived.

The eight-year-old has an IQ of 125. The ten-year-old has an IQ of 100. The twelve-year-old has an IQ of 83+. The IQ, or *intelligence quotient*, is a measure of *rate of mental growth*. It is obtained by dividing the mental

age by the chronological age. An intelligence quotient is computed on the assumption that the rate of mental growth is equal from year to year. It is always an *estimated* rate of mental growth. Because it is based upon the assumption that mental growth is even, it must be regarded as a *rough estimate*.

How Stable Is an Intelligence Quotient?—The question as to whether or not mental tests, given to babies, are of practical value in predicting later mental development is one which should be of particular interest to the nurse. Foster parents, in considering a child for adoption, need to know about the child's mental growth as well as his general physical growth. At present, tests of babies and very young children are not very reliable in predicting later development.²

Although mental test ratings attained during the first few years of life do not, as yet, appear to be of great value in predicting later intelligence test ratings, it is possible for a trained observer to detect feeble-mindedness before the age of one year. Dr. Arnold Gesell, who has devoted many years to the study of infants' development and behavior, believes that it is possible to detect feeble-mindedness which is due to factors operating before birth, by the time a child is one year old.³

Changes in Relation to Age.—Some psychologists, in the light of tests and retests of children who have had the benefit of nursery school experience, maintain that nursery school tends to raise the IQ.⁴ Much evidence can be gathered to support this point of view, although not all studies indicate that children in nursery school improve more in test rating than children who do not attend nursery school.⁵ A tendency for IQ rating to be somewhat unreliable has been observed among young children, whether in the nursery school or not. A tendency to improve on retest is, however, often greater in the case of children in nursery school than it is in the case of non-nursery school children.

Children of kindergarten and first grade age also vary in IQ when tests are repeated. Studies suggest that, in the case of about two-thirds of any one group, the variation in IQ falls between 10 and 20 IQ points, and that there is a general tendency for children who change, to gain rather than to lose.⁶ With a possible variation of 20 or more points in IQ, a test given to a child below school age is, very often, only a rough measure of his rate of mental growth. As long as it is regarded as a rough and not an absolute measure an IQ rating can prove useful.

Older school children vary less from test to test. In general, in the case of about 60 per cent of cases, a first intelligence test may be expected to predict later rating within 10 IQ points.⁷ Children whose ratings change,

tend like younger children, to improve in IQ.⁸ A similar tendency to improve rating, in case of change, has also been noted among college women.⁹

In general, studies of the stability of IQ ratings suggest that intelligence tests are more useful when given to older children than they are when given to children of preschool age. They are of some value in predicting a later rating in the case of about 60 per cent of cases. When ratings do change, at any level, they tend to improve rather than to lose. General conclusions concerning the stability of IQ, because they are based upon the *middle* 60 per cent of children tested, do not seem to be applicable to the very retarded or the very superior child.

Uses of Intelligence Tests.—Intelligence tests are used in schools, as one means of becoming acquainted with the growth needs of individual children. Aptitude tests are used in institutions of higher learning for much the same reason. As one aspect of the total personality of a student, his reactions to an aptitude test are of interest to his advisers. A high score on an aptitude test indicates that a student should, as a rule, be doing well in his class work. If he is making poor grades, in spite of ability as suggested by his aptitude test, the student and adviser together are able to look for causes of failure other than inability to do scholastic work at a college level. This is but one suggestion of how the results of an intelligence test are used. When other personality characteristics are taken into consideration, the results of aptitude tests are used much more constructively than when intelligence test scores are used without consideration of other traits.

Individual mental tests, given by a highly trained tester, are used in selecting school children who are to be placed in ungraded classes and both children and adults who are to be placed in institutions for the feeble-minded. In the case of persons whose first IQ indicates feeble-mindedness, repeated tests are likely to confirm the first rating. Feeble-mindedness, however, is never diagnosed on the basis of a mental test alone. Numerous evidences of incompetence are taken into consideration before a person is regarded as feeble-minded. A child is not placed in an ungraded class and children and adults are not committed to institutions for the feeble-minded on the basis of IQ only. As a rule, a test is given after many evidences of incompetence have been observed. Without a test which confirms suspicions of subnormal mentality, however, a person is not adjudged feeble-minded. The test serves as final evidence of his need of special education or care.

Mental test ratings are also used in law, at times, to determine to what extent a law-breaker is to be held responsible for his acts. A test, yielding an IQ of less than 70, coupled with evidence of intellectual immaturity, may be a factor in the disposition of a culprit's case. In deciding upon

guidance procedures, mental ratings are also of value to those who judge of the law-breaking acts of delinquents.

Intelligence tests are widely used in connection with vocational counseling. On the basis of an intelligence test alone no one should be advised to go into a certain vocation, but he could very well be advised that certain vocations should probably be avoided. A person, who has tested as dull and who has graduated from the eighth grade with difficulty, would stand very little chance of making a success of any of the professions. On the other hand, a person of unusual competence, as indicated by both his intelligence test ratings and his general adaptation to life, would seem to be most unwise if he were to elect a vocation which called for a minimum of intellectual effort upon his part.

TESTING SPECIAL APTITUDES AND INTERESTS

A high score on a test of general intelligence tells nothing at all about a person's special interests and abilities, such as interest or ability in music, in graphic arts, in athletics, or in the mechanical technics. Specialized interests and abilities contribute greatly to a person's uniqueness (his personality). There are tests for evaluating many such aptitudes. As illustrative of what is meant by *aptitude*, scales to measure mechanical interest will no doubt prove to be of interest to the student.

Mechanical Aptitude.—Mechanical ability seems to be dependent upon experience. In every home there are numerous mechanisms in which children and adults can become interested if they happen to be guided in developing such an interest. Many children and many highly intelligent adults as well, know practically nothing about household appliances and about machinery which they have always taken more or less for granted. Some persons, on the other hand, appear to have a strong mechanical interest. They like to take things apart and put them together again and are interested in discovering how things work. Interest in such matters appears to be the foundation upon which ability is built. One reason why so many persons are incompetent when it comes to mechanical procedures is that they have never been interested enough to learn about such matters.

To test anyone's mechanical *ability* it would be necessary to put him into a situation in which he had to deal with concrete manipulative problems. Tests of mechanical *aptitude*, however, are usually paper and pencil tests. They often measure a person's readiness to learn certain mechanical procedures, since one evidence of readiness to learn mechanical skills is interest in mechanics. Another indication of mechanical aptitude is a person's mechanical knowledge. To be significant of mechanical aptitude such knowledge

must cover a wide field. A boy who becomes very much interested in radio or in building model airplanes may or may not have marked mechanical aptitude. But the person who learns how to *fix* doorbells, wringers, leaky faucets, and almost anything else that needs to be fixed in a home is probably a person with mechanical interest, knowledge, and ability. If he were to be tested with a paper and pencil test it is likely that his superiority would become evident. Paper tests, however, measure interest and knowledge and not mechanical performance.

An illustration of a method which is used in evaluating mechanical aptitude is shown in Figure 49.

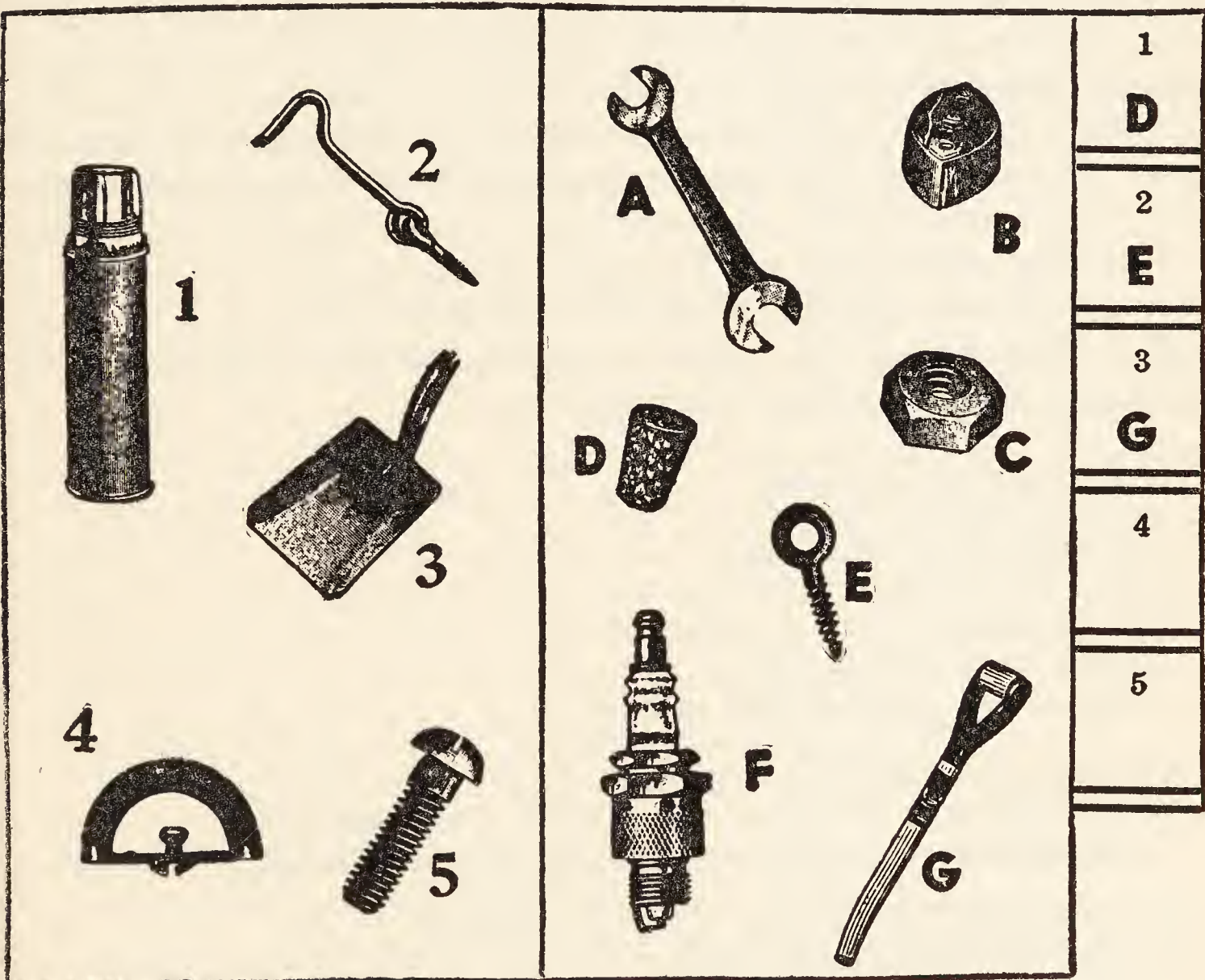


FIG. 49.—MELLENBRUCH MECHANICAL APTITUDE TEST FOR MEN AND WOMEN.

Directions. This is a test to discover how aware you are of objects which are commonly seen and used. Each picture, having a number, goes best with one picture, having a letter. You are to match each numbered picture with the lettered picture which goes with it best. At the side of the page PRINT the letter in the space with its proper number. For example, 1D, 2E, 3G, etc. There are twelve numbered pictures and fourteen lettered pictures on each page, so on each page two lettered pictures will be left over. (By permission of P. L. Mellenbruch, author, and Science Research Associates, publishers, Chicago.)

Many tests have been devised to evaluate various co-ordinated reactions, and perceptual motor performances. In these tests the subject is put into an actual situation to which he must make motor and perceptual responses. World War II has contributed greatly to the development of tests of this type. They have proved useful in testing aviation cadets, trainees in the signal school and in many other branches of the armed services. The purpose is to discover candidates who will profit most from a period of specialized training.

Vocational Interests.—Tests of vocational interest are often included in batteries of tests given to students at the time of entrance to college. While no one would advise choosing a career upon the basis of interest alone, it is often desirable to capitalize upon strong interests. On the other hand, it is usually advisable to avoid professions in which many aspects of the work are decidedly uninteresting. One of the greatest contributions of the measurement program is the help that is made available to young persons, so that they may choose vocations to which they are fitted. Excerpts from one test of vocational interest, which is designed to measure comparative interests in the various fields, suggest the nature of vocational interest and the possibility of evaluating it. The subject is asked to indicate a preference for one activity in each set of three alternatives.*

Take a course in sketching
Take a course in biology
Take a course in mental work

Make a study of flower arrangement
Make a study of mental ills
Make a study of propaganda methods

Interview applicants for relief
Try out different sales letters to see which type works best
Work on the development of more efficient methods of handling office work

Be well known as a director of scientific research
Be well known as a social worker
Be well known as a literary critic

Help in a sickroom
Sell musical instruments
Repair household appliances

* From the *Preference Record*, Form B.B., by G. Frederick Kuder; Science Research Associates, Publishers, 228 S. Wabash Ave., Chicago, Ill., 1942. Used by permission of the publisher.

The test is standardized to evaluate interest in the following vocational fields: mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical. A person whose greatest interest is in computational, or mathematical activities might well consider some type of statistical work in preference to a literary or musical career. A student nurse who tested her vocational interest with this test would, no doubt, find that an interest in social service activities would be suggestive of an interest in some of the aspects of her own profession.

The student nurse, after a few months in the training school, is no doubt aware of some of the aptitudes and interests which characterize a good nurse. Many factors are to be considered in choosing a vocation, if one is to look forward to a comfortable and an efficient adjustment. Intelligence is obviously a factor; some vocations involve much and some relatively little intellectual effort. Many other personality characteristics should also be taken into consideration in selecting a vocation.

TESTING SELF-ADJUSTMENT

Because personality is infinitely complex, it is not possible to devise a test which can furnish us with a complete picture of any one person. It is possible, however, to select certain highly significant aspects of adjustment and, by including them in a test series, to evaluate a person's attitudes toward himself and characteristics of his social adjustment. This has been accomplished in a test from which the following excerpts have been taken. (Items have been selected to illustrate Self-Adjustment.) * The subject is asked to check either *yes* or *no* in responding to each question.

Is it hard for you to admit it when you are in the wrong?

Is it easier to do things that your friends propose than to make your own plans?

Do you prefer security to a new position which might pay more?

Does it discourage you when people do not appreciate you?

Do your friends seem to think that you have made the success of which you are capable?

Do you feel as competent in your work as you would like?

Even when you show good judgment, do you often fail to receive proper credit?

Do you go out of your way to avoid meeting someone you dislike?

* From *The California Test of Personality*, Adult, Form A, by Ernest W. Tiegs, Willis W. Clark, and Louis P. Thorpe. Published by The California Test Bureau, 3636 Beverly Blvd., Los Angeles, Calif., 1942. Used by permission of the authors and publisher.

Does it seem to you that younger persons have an easier and more enjoyable life than you do?

Are you frequently troubled by serious worries?

Do you have difficulty thinking clearly when you get worried or excited?

The same series of tests contains one which is adapted to children in the primary grades. The following items are suggestive of the nature of the test.*

Do you make a fuss when things go wrong?

Do your folks keep you from playing with the children you like?

Do you feel that people don't like you?

Do many children say things that hurt your feelings?

Would you rather watch others, than to play yourself?

The variety of adjustments included in the test illustrates the complexity of personality. The subject is given a rating, not only on his total adjustment score, but on each of the following characteristics: *Self-Adjustment*,—self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, freedom from withdrawing tendencies, and from nervous symptoms; *Social Adjustment*,—social standards, social skills, freedom from anti-social tendencies, family relations, occupation relations, and community relations.

TESTING TEMPERAMENT

In making adaptations to life, it appears that everyone tends to adjust according to a very rough pattern. Some, for example, *tend* to be nervous while others tend to be calm; some are usually light-hearted and happy while others are depressed much of the time; some tend to be critical while others are appreciative. Some display what they like to call the "artistic" temperament. Some are irritable while others are calm and easy-going. The pattern of a person's behavior, or his disposition, is sometimes designated as *temperament*. Temperament is a highly significant factor in adjustment. A nervous "jumpy" woman would probably be a misfit as a nurse or teacher; she would in all probability become more nervous and jumpy in the course of her professional activity, to say nothing of the influence she would have upon others.

In scanning tests of temperament, in order to add to her insight into human adjustment, the student nurse should guard against the belief that

* From *The California Test of Personality*, Primary, Form A, by Ernest W. Tiegs, Willis W. Clark, and Louis P. Thorpe. Published by The California Test Bureau, 3636 Beverly Blvd., Los Angeles, Calif., 1942. Used by permission of the authors and publisher.

temperamental reactions are so firmly established that they cannot be changed at all. It is undoubtedly true that it is easier for some persons to be calm than it is for others. Nervousness and irritability seem to characterize some persons from babyhood. Aspects of temperament which can be attributed to structural heredity are less easily changed than some others but, since environment is a basic factor in developing all traits, it is apparent that traits of temperament, like others, are "toned down" or exaggerated according to experience.

A few excerpts from a rating scale illustrate some aspects of temperament.*

How relatively calm is S when others are disturbed or confused?

How eager is S to be in a position to give orders rather than take them?

How often does S keep his views to himself, because they do not seem important enough to tell others?

How easily can S work when others about him are talking?

How much is S sympathetic with those in pain so that he would want to do something about it?

How much can S make independent judgments regardless of his likes or dislikes for the people in the case?

How well can S take criticism easily without being annoyed?

How hearty is S in greeting people?

How readily is S able to shake off the saddening effect of a motion picture or drama which has much death or hardship in it?

How much does S think well of people, instead of "running them down" or speaking against them?

The scale is used to indicate the *direction* of the development of certain characteristics which are stated in extremes as: *active—quiet; nervous—composed; depressed—gay-hearted; subjective—objective; critical—appreciative; cordial—cold; sympathetic—hard boiled; self-mastery—impulsiveness; and aggressive—submissive.*

TESTING SIGNIFICANT TRAITS

In a study of personality, it is often illuminating to test a person for certain traits such as: objectivity, cooperativeness, agreeableness, independence, resourcefulness and responsibility.

Tests of objectivity, for example, while they measure only a limited aspect

* From *Johnson Temperament Analysis*, Form B, by Roswell H. Johnson. Published by the California Test Bureau, 5016 Hollywood Blvd., Los Angeles, Calif., 1944. By permission of publisher.

of personality, add to our insight into a most important way of behaving. An intelligent person should be able to maintain an objective attitude toward problem situations of all kinds, but not all intelligent persons are as objective as they might be. The student nurse who regards all unfavorable reactions to her as personal will find her profession trying.

The desirability of being cooperative and agreeable is readily recognized. In the nursing profession both characteristics are not only desirable but essential. Tests of traits such as objectivity, cooperation and agreeableness serve a useful purpose in personal and vocational guidance and in the selection of personnel in business and industry.

In almost every phase of life, independence and habits of personal responsibility are prized characteristics. A resourceful person adjusts better and more speedily than one who does not know what to do when a solution to a problem is not immediately apparent. A successful nurse must be an independent, resourceful, and responsible person; her profession is very exacting in demanding such traits. A few excerpts from a much longer test suggests how such characteristics may be evaluated.*

Do you go ahead with other work besides what you have been told to do?
If your parents have made a decision regarding you that is not to your liking, do you try to "argue them out of it"?

Can you be easily "talked into" doing something against your better judgment?

After you are given directions for doing something new, do you proceed by doing it your own way?

Would you rather spend more time and effort yourself than to ask for help in a subject in which you have made a low grade?

If a sign says "Keep off the grass," do you walk on the lawn?

When you are given a new piece of work to do, do you like to be told just how to do it?

TESTING SOCIAL ADJUSTMENT

The way a person behaves when in the company of others is one indication of his individuality. By observations of overt social behavior, it is possible to recognize certain individual characteristics. If we depend upon casual observation alone, however, we are sure to exaggerate certain traits and to overlook others. By using a test or a rating scale, we can often be made to appreciate some characteristics which we have been inclined to dis-

* From *Every-Day Life* by Leland H. Stott. Published by the Sheridan Supply Co., Beverly Hills, Calif., 1941. By permission of author and publisher.

regard. If the student nurse were to test or rate herself or were to have another person rate her on a scale designed to evaluate social behavior, she would be almost certain to learn something about herself which would surprise her.

Social Behavior.—Paper and pencil tests of social behavior can measure only what a person thinks that he does or what some other person thinks that he does. Sometimes the tests are organized in such a way that a person may rate himself; sometimes another person or persons rate the subject. A few excerpts from one inventory of social behavior suggests some of the factors to be considered in evaluating social adjustment. (These few items, selected from a complete inventory, are merely illustrative and do not, of course, constitute a measure of social adjustment. Each item is checked on a scale from 5 to 1: *almost always, frequently, occasionally, rarely, and almost never.*) *

- Starts conversations with strangers.
- If a party is dull, takes the lead in enlivening it.
- Has no difficulty talking before groups of people.
- Enjoys entertaining people.
- Is able to recover quickly from social blunders.
- Has a fairly good time at most parties.

Social Intelligence.—Social adjustment is to be evaluated, not only in terms of overt behavior, but in terms of attitudes and insight. A few items, selected from a test which is designed to measure an intelligent appreciation of the social behavior of others, suggest a few characteristics of *social intelligence*.**

- | | | | |
|-------------------|---------------|----------------|---------------|
| 1. Ambition | 6. Disgust | 11. Indecision | 15. Rage |
| 2. Admiration | 7. Envy | 12. Jealousy | 16. Regret |
| 3. Despair | 8. Fear | 13. Loneliness | 17. Scorn |
| 4. Determination | 9. Hate | 14. Love | 18. Suspicion |
| 5. Disappointment | 10. Hypocrisy | | |

DIRECTIONS: In the parentheses before each of the following quotations write the number of the word from the list above which most accurately describes the mental state of the person making the statement.

* From The Minnesota Inventory of Social Behavior, by E. G. Williamson and J. G. Darley, 1937. Distributed by The Psychological Corporation, 522 Fifth Avenue, New York, N. Y. By permission of J. G. Darley.

**From *Social Intelligence Test*, By F. A. Moss, Thelma Hunt, and Katharine T. Omwake. Published by the Center for Psychological Service, George Washington University, Washington, D. C., 1930. By permission of authors and publishers.

Some of the mental states in the list may not be represented at all below, and some may be represented more than once.

- () Which one of them shall I take? Both? one? or neither?
- () And to think I had looked forward to this party for days!
- () In the future as in the past I shall strive to attain the highest places of fame.
- () Every time I look at him I feel—I almost know—that he is plotting against me.
- () If only I had not let that opportunity slip I might now be enjoying the things I have longed for.
- () I wish I had your opportunity. Things are always handed to you on a silver platter, but I never get a chance to do anything.

DIRECTIONS: If the statement is true, encircle the T; if it is false, encircle the F.

- T F 30. Most people would rather admit having bad judgment than bad memory.
- T F 48. The tendency to reverie is more dominant from twenty-five to forty years of age than at any other time of life.

Social Attitudes.—Everyone, of course, has innumerable social attitudes which tend to give direction to his reactions to social situations of many types. All of one's prejudices and preferences enter into his social attitudes. In spite of the great variety of social attitudes which everyone has, there seems to be a rough pattern into which many social attitudes may be fitted. Some persons seem to be consistently opposed to social changes, thereby earning the label of *conservative*. Some tend so frequently to be in favor of change that they are regarded as *radical*, or *liberal*. Some seem, on the whole, to favor *middle-of-the-road* policies.

Measures of *conservatism*—*radicalism* are valuable in contributing to our understanding of others and are, perhaps, even more valuable in contributing to an understanding of ourselves. Whether a person tends toward one extreme or the other depends upon the kind of a background he has. It is unquestionably true that children begin to acquire conservative, or radical, or in-between attitudes as soon as they begin to pay attention to the discussions of those about them. Conservatism or radicalism, like all other contrasting attitudes, should not be considered in terms of black and white. The figure which we have used several times in the text (white shading through gray to black), should be remembered in this connection. Which side of the scale is *white* and which side is *black* is of course a matter of personal opinion.

Conservatism and radicalism, like other aspects of personality, appear to have little to do with intelligence. Radicals are persons who have learned to believe that change in social conditions is not only desirable, but that it is possible to bring changes about. Conservatives, on the other hand, have learned to believe that conditions are best as they are, or that certain social changes are not feasible. A test has been devised to measure differences in degrees of opposition to change or in inclinations favoring change. A few excerpts from the test may serve to stimulate an interest in discovering individual differences in conservative or radical tendencies.*

Our courts should be in the hands of sociologists rather than lawyers.
Not the young men, but the old men, should fight our wars.
Socially-minded experts, rather than voters, should decide the policies of government.
Criminals should be treated like sick persons.
Conservative people are usually more intelligent than radical people.
Freedom of teaching, that is, allowing teachers to teach what they think is the truth, is necessary for real education.
Preaching is one of the most effective ways of teaching people to lead better lives.

While practically everyone tends to be somewhat consistently *middle-of-the-road* or more or less inclined toward either extreme of conservatism or radicalism, it is possible to have conservative attitudes toward some issues and radical, or liberal, attitudes toward others. Some excerpts from another test of social attitudes suggest some of the many social questions toward which practically everyone must develop attitudes of one kind or another. (Responses are made by encircling numbers ranging from $+2$, indicating a strong conviction that the statement is true, through 0 , indicating uncertainty, to -2 which indicates a strong conviction that the statement is false.)**

PART I—THE NEGRO

The few Negroes who have succeeded owe their success to their white blood.
The only accomplishment of the Negro worthy of any recognition has been in the realm of music.

* From the *C. R. Opinionnaire*, Form J., by Theodore F. Lentz and Colleagues. Published by the Character Research Institute, Washington University, St. Louis, Mo., 1943. By permission of the author.

**From *A Test of Social Attitudes*, (1939), by E. C. Hunter. Distributed by the Psychological Corporation, 522 Fifth Avenue, New York. By permission of the author.

PART II—WAR

Because of the aggressive and self-assertive nature of man the abolition of war is an illusory ideal.

It is the moral duty of the individual to refuse to participate in any war, no matter what the cause.

PART III—ECONOMICS AND LABOR

The majority of labor strikes in this country are justified.

Old age and unemployment insurance should be maintained by the national or the state government.

PART IV—SOCIAL LIFE AND CONVENTION

The movies are improving the morals of American youth.

In meeting social problems the old "right or wrong" standard is being rapidly replaced by the standard of prudence.

PART V—GOVERNMENT

No individual should be allowed to inherit more than a million dollars, the national, state, and local governments taking all above that figure.

It is just and desirable that a small proportion of the population should be very rich because a man's wealth is a good measure of his abilities, industry, and service to his fellow men.

PART VI—RELIGION

The church furnishes the stimulus for the best leadership of our country.

A civilization in which two per cent of the population own over sixty per cent of the property does not take Christianity very seriously.

PART VII—MISCELLANEOUS

All diagnostic, medical and dental work should be a function of the state. A student caught cheating on an examination should be expelled from school.

The rating of one college student on this scale shows a wide variation from liberalism in certain attitudes to extreme conservatism in others. Her conservatism or liberalism is indicated by the percentage of persons who equal or exceed her in liberalism. (See Table XI.)

TABLE XI.—ONE STUDENT COMPARED WITH PER CENT OF STUDENTS EQUALLING OR EXCEEDING HER IN LIBERALISM AND CONSERVATISM

Attitudes Toward	Score	Per cent Equalling or Exceeding in Liberalism	Per cent Equalling or Exceeding in Conservatism
Negro	—18	90	10
War	— 2	60-70	30-40
Economics and Labor	—21	99+	— 1
Social Life and Convention	+14	5	95
Government	— 6	75	25
Religion	+ 9	— 5	95+
Miscellaneous	..+ 5	25-30	70-75
TOTAL	—19	70	30

It is to be noted that in her total score, this student rates very conservative. Only 30 per cent may be expected to be as conservative as she, while 70 per cent may be expected to equal or exceed her in liberalism. She appears to be very liberal, however, in her attitudes toward religion, being equalled or excelled in liberalism by not quite 5 per cent. She rates very liberal, also, in her attitudes toward social life and convention. In her attitudes toward economics and labor, however, she is extremely conservative; she is excelled in liberalism by more than 99 per cent. In her attitudes toward the Negro she also rates extremely conservative.

TESTING EMOTIONAL ADJUSTMENT

There are many excellent scales and tests which are used successfully in studying individual variations in emotional adjustment. Some of these are inventories to which the subject responds by checking statements which describe how he feels about certain situations.¹⁰ Tests of emotional reactions are used with normal persons in schools, universities and in vocational guidance.

Because the student nurse is so fundamentally concerned with the parallel activity of organic and outward symptoms of emotional disturbance, tests of neurotic tendencies may be of particular interest to her. Various scales and tests have been devised for the purpose of detecting such tendencies. One test is planned to differentiate between symptoms that are "predominantly physical" and those that are "predominantly mental."¹¹ The scale is based upon the study of apparently normal college students and psychoneurotics from an out-patient clinic. The questions which are included in the scale are based upon complaints made by neurotics and discovered through case his-

tories and interviews. Some of the questions are designed to test the frequency of physiological symptoms. Other questions listed as “psychological” pertain to more vague and less localized symptoms. Sample items from the scale appear in Table XII. The tests proved to be significant in distinguishing between the psychoneurotics and the college students.

TABLE XII.—SAMPLE QUESTIONS FROM THE P.S. INVENTORY IN ORDER OF RELIABILITY

Physiological Questions	Psychological Questions
Feel nervously broken down	Get irritated or upset easily
Feel well and happy	Feel just miserable
Excited or nervous (inward tension)	Things go wrong for you by no fault of your own
Feel faint or do faint	Feelings easily hurt
Spells of dizziness	Get discouraged easily
Constipation	Queer feeling as if you were not your old self
Physically depressed or miserable	Feel grouchy
Fidgety and restless	Feel afraid in many situations
Fatigued or exhausted	Worry over trifles
Difficulty in breathing	Get so discouraged cannot work properly

From “A Psycho-Somatic Inventory,” by Ross A. McFarland and Clifford P. Seitz, *Jour. Appl. Psychol.*, 1938, 22, 331. by permission of authors and publisher.

Technics used in the detection of neurotic or of abnormal tendencies are sometimes most ingenious. One set of tests, which is used widely, consists of blot pictures which the subject is encouraged to interpret.¹² Another test makes use of pictures which are shown to the subject who is asked to “make up as dramatic a story” as he can.¹³ Another test makes use of cards to detect paranoia, psychasthenia and schizophrenia.¹⁴ In her psychiatric affiliation, the student nurse may have an opportunity to see how tests such as these are used.

TESTS FOR STUDENT NURSES

Leaders in the field of Nursing Education are much interested in developing tests for use in hospital training schools. There can be no doubt of the fact that not every young woman who is interested in nursing has the qualifications needed to become a good nurse. Not all high school graduates who are in the upper third of their class, as far as grades are concerned, give promise of becoming proficient nurses. Not all highly intelligent candidates are good prospects. By no means all young women of integrity of character and high ideals can be successfully trained as nurses.

Scholastic Aptitude.—The nurse must be an intelligent person. Not only is she called upon to study difficult subjects; she must be competent to make critical judgment concerning the welfare of others. In many nursing schools a scholastic aptitude test is given before or very soon after admission to the school. This test, as a rule, is one of the aptitude tests which are used widely in testing college freshmen. It usually contains items which are similar to some that have been illustrated in this chapter in a discussion of tests of intelligence. It serves the same purpose as an intelligence test given to children. Student nurses and college students, however, are not given an IQ rating on such tests. There are several reasons why this is not done. In the first place, an intelligence quotient measures rate of mental growth and is, therefore, misleading when applied to adults. In the second place, adult tests are usually developed in selected groups such as groups of college students and, therefore, represent the performance, not of the average man or woman, but of selected groups of men and women. The entering college freshman is compared with other persons very much like himself. Similarly the student nurse is compared only with high school graduates. A student nurse who is rated as average on a scholastic aptitude test is average in a group in which the rank and file of applicants tends to be above average; very few dull persons survive high school and still fewer undertake professional training such as nursing.

Scholastic aptitude tests have proved useful in helping to select candidates who are able to become good nurses. In studies that have been made of the later success of student nurses, it has appeared that a high score on the scholastic aptitude test is often an indication that the student will make a success of her training, as far as class work and the licensing examination are concerned. The significance of a good score on a scholastic aptitude test is suggested in a study made of 1555 students entering schools of nursing.¹⁵ In every group of 100 students whose scholastic aptitude tests placed them in the top 10 per cent of students, all but 4 succeeded in classwork and passed the licensing examination. Of those who rated in the lowest 10 per cent, 36 per cent succeeded and 64 per cent failed in classwork or on the licensing examination.

Subject Matter Tests.—High school grades are usually considered in selecting candidates for nursing schools, but, because high schools differ so widely in their standards, subject matter tests are often given to candidates. Students who have taken such tests sometimes ask why they have been subjected to some test items which are far beyond them. The tests are made so that on each test there will be some items which practically no one can answer in the time given. It is necessary to make tests much too hard for

the average candidate in order that those with exceptional background may have an opportunity to show how much they know.

It is reasonable to expect that a student with superior knowledge of high school subjects would be more ready to profit from her training school program than one whose knowledge is relatively limited. That this is generally the case is suggested by the inclusion of subject matter tests in batteries prepared for student nurses. Tests of aptitude and of ability do not tell the whole story, however. Candidates do not stand or fall upon the basis of intelligence and academic background alone. In this connection, it is interesting to compare the ratings on intelligence and subject matter tests of two student nurses. (See Figure 50.) In their rank on the various tests, the two students are not unlike. Both are below average in total score on the psychological test. Both rate satisfactory or better in reading. Both are poor in the mechanics of expression. One, Miss A, appears to have an advantage over Miss B in her total score on effectiveness of expression. Both are below average in mathematics and superior in their total scores in natural science and social science.

On the basis of these scores alone, it would be difficult to predict the success of either student. Low ratings on the scholastic aptitude test, on mechanics of expression, and on the mathematics test would suggest that both students might find the going very hard. Good reading skill and knowledge of natural science and social science, on the other hand, might offset some of the weaknesses of each. As a matter of fact, the two students differed widely in their adjustment to the first half year of training. Miss A made a poor record in every subject, including the sciences. Miss B made a satisfactory record in all of her courses. Miss B's success and Miss A's non-success during the initial months of their training must be attributed to something which the tests do not measure. Perhaps the answer to a question regarding the poor record of one and the satisfactory record of the other is to be found in an analysis of their study habits, their leisure activities, their general attitudes toward their work, and other characteristics which are not readily measured.

Test of Adjustment.—Whether tests of adjustment such as those that have been mentioned in this chapter would give a clue to the non-success of one and the success of the other is difficult to say. In many instances such tests bring to light emotional tendencies which may be handicapping or which, on the other hand, may prove a great asset. Heads of training schools and other leaders in the field of nursing education are interested in experimenting with personality tests in the hope of discovering some that may prove to be especially helpful in picking out good nursing school prospects.

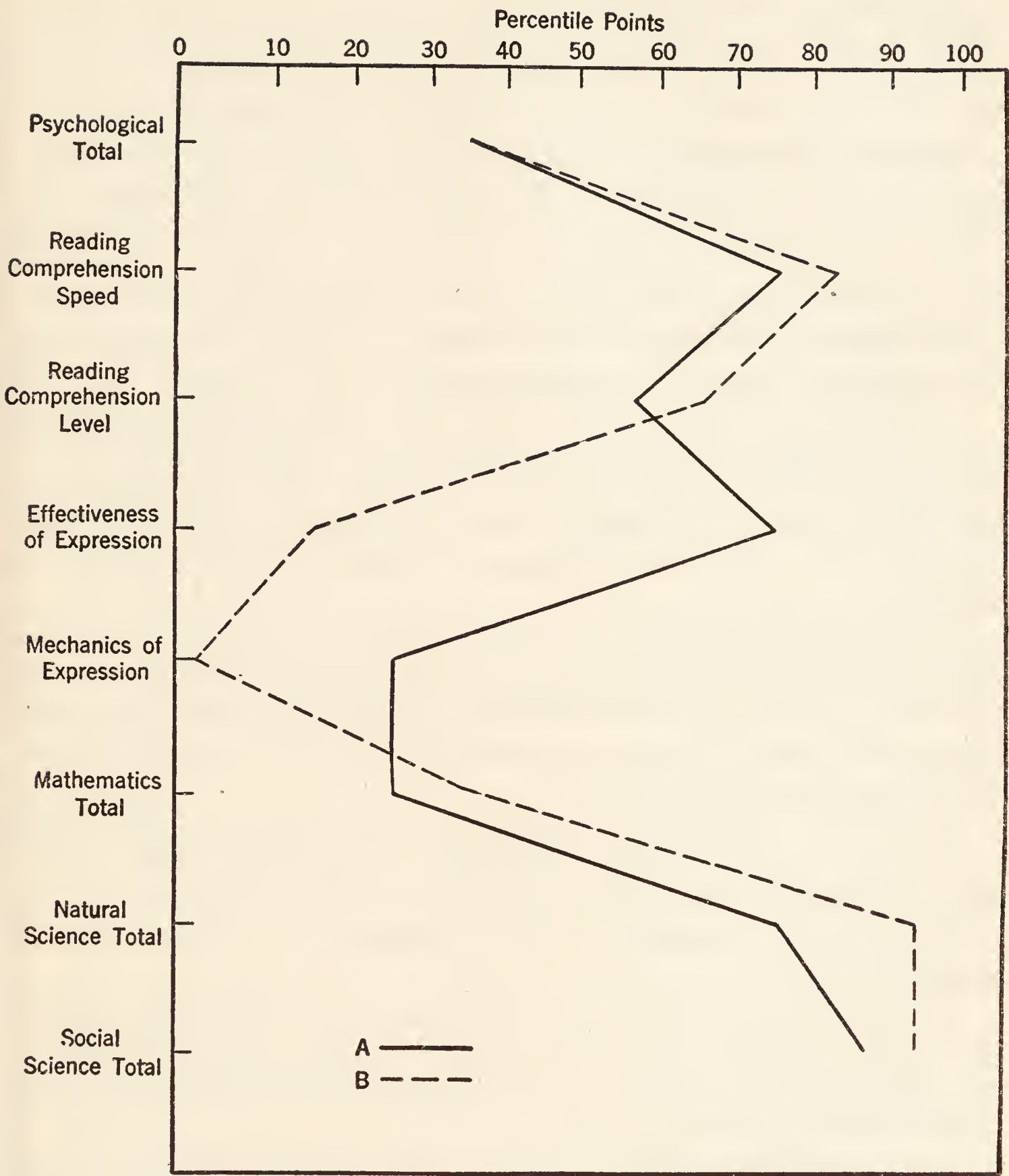


FIG. 50.—PROFILES OF TWO STUDENT NURSES, ONE SUCCESSFUL, ONE UNSUCCESSFUL.

SUMMARY

Measures of aspects of personality may be compared to a number of snapshots taken from different angles. We cannot measure personality as a whole, but we can, through various measuring devices, evaluate certain important traits and combinations of traits.

The use of intelligence in everyday adjustments is one aspect of personality of which rough measurements are to be obtained. A well chosen intelligence test serves as a fairly good measure of the learning capacity of the *majority* of subjects in groups to which the test is adapted.

The best known and most widely used test of general intelligence is an American revision of the *Binet-Simon Scale of Intelligence*. This is an individual, verbal test. Capacity for learning is estimated by evaluating what a person has learned, assuming that the majority of subjects in each age group have had ample opportunity to learn responses required on the test.

Intelligence is sometimes estimated by means of an individual performance test; the subject is asked to manipulate objects in various ways.

Group tests of intelligence have been used in this country since World War I. The necessity for classifying drafted men, quickly, resulted in the two forms of the army tests. One form, the *Army Alpha*, a verbal test, has served as the basis of tests which are used extensively today. The other form, the *Army Beta*, does not necessitate a knowledge of written or spoken English.

Group tests which are in current use have been developed through extensive trials with many subjects and have been standardized after ratings have been obtained from many hundreds of subjects representing the population at large. Aptitude tests such as are given to student nurses are illustrative of group intelligence tests.

Mental age is a term used to evaluate a person's level of mental growth at the time he is tested. It is a comparative measure, indicating that his mental development is about like that of a person of a given age.

The *intelligence quotient*, or IQ is an estimate of a person's rate of mental growth.

At present, tests of normal or superior babies and very young children are not very reliable in predicting the rate of later mental development, but feeble-mindedness which is due to factors operating before birth can often be detected at an early age.

Some psychologists maintain that test rating during preschool years is influenced by nursery school attendance. A tendency to improve in IQ rating is characteristic of most young children whether in nursery school or not. Nursery school children often seem to gain more than those who are not in nursery school.

When change in IQ rating is studied at different age levels, studies suggest that school age children change less than do younger ones. Among school children, a first intelligence test rating predicts a later rating fairly well in about 60 per cent of cases.

When used as *estimates* of learning capacity, test scores are valuable in individual guidance at all levels. When other factors are taken into consideration they are useful in diagnosing feeble-mindedness in schools, in the institutionalizing of incompetent persons and in law.

Special aptitudes, such as aptitudes for music, graphic arts, athletics, or mechanical technics are significant in their contribution to individuality, or uniqueness of personality. Tests are used successfully in studying such aptitudes.

Tests of vocational preferences and interests are proving useful in vocational guidance. Interest in certain activities does not necessarily imply fitness for a specific vocation, but general fields of interests are often significant in vocational advising.

Tests of adjustment are valuable in the diagnosis of personality. Self-adjustment tests measure such traits as self-reliance, a sense of personal worth, a sense of personal freedom, a feeling of belonging, and freedom from withdrawing and from nervous tendencies.

In making adaptations to life, everyone tends to adjust according to a rough pattern. The pattern of a person's behavior, or his disposition, is sometimes designated as *temperament*. Temperament is tested successfully by rating scales and by adjustment inventories.

Special traits of personality can be tested and test results can be made useful not only to those who study a person, but to the person himself, who can use them in studying his own strengths and weaknesses.

The way a person behaves when he is with others is one of the many ways in which he expresses his individuality. Tests of social behavior serve to make our judgments of personality more objective.

Social intelligence, or insight into the behavior of others is an aspect of personality which can be evaluated by a test.

Social attitudes of all sorts must be taken into consideration in studying personality. Measures of conservatism and radicalism, or liberalism, serve to suggest a person's general tendency to be either conservative or radical. Tests also indicate that a person may be extremely conservative in his attitudes toward some social questions while he is radical in his attitudes toward other questions.

General emotional adjustment is estimated by means of personal inventories. Neurotic tendencies are measured similarly.

The student nurse often takes a battery of tests which include scholastic aptitude tests and measures of academic achievement. Both types of tests have proved useful in predicting ability to make grades in training school and to pass state board examinations. Personal characteristics other than

aptitude and academic background also enter into successful completion of a nurse's training school program.

Leaders in the field of nursing education are interested in developing programs of testing that will be helpful in selecting students who have the personality characteristics of a good nurse as well as scholastic ability and a good academic background.

SUGGESTED ACTIVITIES

1. Discussion.

(1) A student nurse, instead of taking a patient's temperature, made an entry on the chart of the patient's temperature at the previous recording. Was this an intelligent act? In the light of what you know about the nature of intelligent behavior give arguments to support your judgment.

(2) A child in the hospital resisted when the doctor wanted to use the stethoscope, protesting that it would hurt him. Under what conditions would you be unable to judge whether or not the child behaved intelligently?

(3) Without any standardized measures of certain motor performances how might you estimate your increase in skill?

(4) How might a special ability or interest such as ability or interest in music or art be a personal asset in the professional as well as the private life of a nurse?

(5) Give illustrations of the use of *social intelligence* in the training school, the hospital and in life on the outside.

(6) Why might it be important to you to know how you compare with other students in tendencies to conservatism or liberalism in general? Why might it be important to you to know how you compare with other students in your attitude toward selected social problems?

2. Use of rating scale. Prepare four copies of the rating scale which follows:

(1) Rate yourself on each trait, by checking one of the five positions on the scale.

(2) Ask three of your classmates to rate you without signing their names, or if the whole class participates, one person may be selected to distribute rating sheets. (In this way no student will know who rates her.) Make a composite of the four ratings by averaging the values: low, 1; below average, 2; average, 3; above average, 4; and very superior, 5.

(3) Do you regard your average rating as final? Discuss in the group in the light of your course in psychology.

3. Notebook suggestions. Record your rating on personality traits. Plan to refer to it at some later date, possibly asking some acquaintances to give you a later rating.

	Low 1	Below Average 2	Average 3	Above Average 4	Very Superior 5
Adaptability	_____	_____	_____	_____	_____
Agreeableness	_____	_____	_____	_____	_____
Cooperativeness	_____	_____	_____	_____	_____
Emotional Maturity	_____	_____	_____	_____	_____
Independence	_____	_____	_____	_____	_____
Initiative	_____	_____	_____	_____	_____
Judgment	_____	_____	_____	_____	_____
Objectivity	_____	_____	_____	_____	_____
Open-mindedness	_____	_____	_____	_____	_____
Leadership	_____	_____	_____	_____	_____
Self-control	_____	_____	_____	_____	_____
Self-reliance	_____	_____	_____	_____	_____
Responsibility	_____	_____	_____	_____	_____
Tactfulness	_____	_____	_____	_____	_____
Tolerance	_____	_____	_____	_____	_____

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Dashiell, John Frederick. *Fundamentals of General Psychology*, New York: Houghton Mifflin Co., 1937.

Read Chapter XX. Personality in general and methods of measuring are discussed.

Dockeray, Floyd. *Psychology*, New York: Prentice-Hall, Inc., 1942.

Chapter XVII discusses levels of attainment and measurement of various characteristics. Some mechanical dexterity and form board tests are pictured.

Hunter, E. C. "Changes in General Attitudes for Women Students During Four Years in College," *J. Soc. Psychol.*, 1942, 16, 243-257.

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This is a study of responses made by drinkers and non-drinkers to various personality tests. Although the student nurse cannot be expected to appreciate the statistical treatment of data, she should find samplings of responses interesting in the light of this chapter.

McFarland, Ross A., and Seitz, Clifford P. "A Psycho-Somatic Inventory," *J. Appl. Psychol.*, 1938, 22, 327-339.

Shaffer, Laurence F. *The Psychology of Adjustment*, New York: Houghton Mifflin Co., 1936.

In Chapter XI, read pages 291-319 for a discussion of methods of measuring personality.

Tiegs, E. W. "Measuring Personality Status and Social Adjustment," *Education*, 1943, 63, 631-638.

Valentine, Willard L. *Experimental Foundations of General Psychology*, New York: Farrar and Rinehart, 1941.

Social studies of aptitude measurement are summarized in Chapter III.

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- ⁵ GOODENOUGH, F. L., and MAURER, K. M. "The Mental Development of Nursery School Children Compared with That of Non-nursery School Children," *39th Yearb. Nat. Soc. Stud. Educ.*, 1940, 39, (II), 161-178.
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- ¹³ MURRAY, H. A. *Themic Apperception Test*, Cambridge, Mass.; Harvard University Press, 1943.
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Chapter XIV

THE NURSE ON THE HOME FRONT

The major part of our text has been devoted to the more or less immediate adjustments of the nurse in training. We have considered psychological content which has been selected with a view to helping the nurse in her personal and professional adjustments as a student. The emphasis of our discussion has been upon the present. It is true that we have often looked back upon childhood experiences, but this has always been for the purpose of making immediate adjustments more understandable.

In this final chapter of the text we hope to encourage a forward look, as we consider some of the social problems and personal opportunities which lie immediately ahead. We hope to show that a knowledge of psychology is applicable in many fields which lie outside the hospital school.

The *home front* may be interpreted to mean any place in her own or an adopted community where the nurse may be called upon to serve those who are not acutely ill. Sometimes her service will be professional, but her home front interests and activities will, of course, not be restricted to her experiences as a nurse. As an intelligent citizen she will have an opportunity to participate in far-reaching social programs. Because of her training as a nurse she will often have the opportunity to serve as a guide, especially in her contacts with children.

The most far-reaching task of citizens in most communities of the world is to establish a way of living that will make future wars improbable. The United States has assumed the responsibility for re-printing textbooks that were used in Germany before the war, so that German children may once more study texts which have not been planned to teach the doctrines of Nazism. The absolute necessity for re-educating children and adults who have been indoctrinated with an ideology of world conquest and national supremacy is clearly recognized. The other side of the picture, our home front problems of educating habits, standards and attitudes that are favorable to world peace, is even more important.

The student nurse will go out into the community at a time when interest is focused upon intelligent living, as never before. She will have an opportunity to share in the betterment of individual personal adjustment, in the establish-

ment of wholesome human relationships, and in the encouragement of social attitudes which make for better living everywhere.

ESTABLISHING WHOLESOME PERSONAL RELATIONSHIPS

No matter what branch of her profession she may choose after graduation, and even if she were to abandon her profession in favor of establishing a home and family of her own, the student can look forward to many contacts with children. Whatever is to be accomplished in the way of improving personal adjustment, establishing wholesome relationships and encouraging socially desirable attitudes, obviously, must begin as soon as children react to those who give them care.

The violent events of recent years have taught us what it means to live in a world in which *issues* are glaringly defined. We have also learned, first hand, some of the satisfactions which are associated with unity of purpose and an accompanying sense of fellowship. Without intending to create a sense of issue which can be far-reaching in its results, adults very often encourage children to believe that life is just one issue after another. Unity of purpose, a sense of *togetherness*, is a recognized goal among adults who are working for a common cause; as an ideal which might dominate adult-child relationships it is often overlooked.

Parents who have been unwise in encouraging their young children to exercise a despotic control over adults have stimulated a point of view which has served a good purpose in warning against the undesirability of nurturing tyrannical habits in babyhood. So much has been written and said along this line, however, that some adults who give care to babies seem to prepare themselves in advance for many a skirmish which they, apparently, believe to be inevitable. They appear to proceed upon the assumption that every baby is determined to make his caretakers subservient to him. They act as though they must be constantly on guard lest the young monarch succeed in his fell purpose. Thus a battle of wits and wills which is to continue for years is sometimes launched, and the baby is given his first lessons in the interpretation of adult-child relationships as essentially *issue* relationships. In any marked issue someone is likely to lose; neither child nor adult can win in a conflict without encouraging the other to experience a sense of frustration.

There is nothing that we learn from studies of human development which should lead us to believe that babies are *predisposed* to be despotic in their control over adults. Despots are, of course, made and not born tyrants. It is true that a baby can be taught to cry when left alone and that he can be

taught to demand an unusual amount of adult attention. He can also be taught to waken from his nap and lie contentedly in his crib for a brief period. He can be taught to be happy when alone. Wise adults encourage such habits only by the most thoughtful guidance. It appears that the most constructive way to teach a baby to content himself without adult companionship is to see to it that he does not associate physical discomfort with being left alone. Many caretakers, thoughtlessly, wait for the baby to become emotionally disturbed before giving him needed attention, thereby laying the foundation for the very habits which might better be discouraged.

The emphasis in infant guidance is, as has been suggested, so often an emphasis upon negative aspects that adults are better prepared with a knowledge of what *not* to do than they are with knowledge of what *to* do. The same negative teachings carry over to the baby when adults are more concerned with what the baby should not do than they are with what he should do. Parents and other caretakers are generally agreed that the baby should not demand constant adult companionship, but they are very often satisfied when they have tried to teach him that he cannot have it. Babies need to experience companionable relations with adults at the right times. We stress unity of purpose in adult relations. In order to achieve more of it than we have had heretofore, it seems desirable to plan for it in infancy. The adult can help the baby learn something about what it means to do and see things *together*. Companionable relationships between babies and adults seem to be a sound foundation upon which to build for generally improved social relationships.

Runabout children, as has been noted earlier (see *Negativism*, p. 178), often live a life which encourages them to believe that interference is a predominating adult characteristic. A person who is interested in keeping the child's life as free as possible from adult-child issues will be on guard against needlessly interfering with young explorers. One has but to sit on a park bench, ride in a public vehicle, or, in some other way, observe adults and young children from a vantage point, to note the frequency with which older persons thwart the harmless activities of children. One mother, for instance, riding in a bus with a two-year-old child, was observed to jerk at the little girl's skirt more times than the observer could count without a pencil and paper record. The child, who was sitting next to the window, endeavored to get to her knees so as to look out the window; the mother jerked her skirt until the child gave up and sat down. A few minutes later she leaned forward to touch something ahead of her; again the mother jerked her back. She started to get to her feet in order to see what was going on behind her, only to be ruthlessly restrained,—and so it went, throughout the trip. This mother did not appear to be unkindly in her attitude toward the child. Her facial

expression was pleasant enough. The jerks were not accompanied by any cross words. It was apparent that she was so much in the habit of diverting the child that her acts of interference had become almost second nature, so that she could check the child without interrupting her own train of thought, whatever it might happen to be.

Adults who are so largely responsible for creating issue situations are often dismayed at the child's unreadiness to respond obediently to their requests. There are, of course, many situations in life in which both children and adults must obey orders, but by no means does all life call for this type of response. Parents and others responsible for child guidance often proceed blunderingly in their attempts to teach obedience. If we are to apply psychological principles to the learning of obedience responses, it follows that we should teach obedience when obedience is *easy*. Usually first attempts to teach obedience occur in situations in which the child is least ready to obey. Once more it seems that an unnecessary emphasis upon issues can make the social development of the young child a hazardous and a wearing process, and that the results may be far-reaching.

Psychology has much to offer the adult who is concerned with guidance of children during the early years of life. A knowledge of the nature of emotions, of what is involved in creative person-to-person relationships, and a knowledge of how attitudes toward oneself and one's immediate associates are learned should prove very useful. If we are to create a society in which unity of purpose is the keynote, the teachings of psychology lead us to believe that we cannot begin our teaching too early.

FOSTERING THE AIMS OF DEMOCRACY

Many nurses, after graduation, through their professional work in schools, clinics, welfare agencies, and in the homes of the community, will have direct contacts with children. They will want to have a share in the encouragement of habits and attitudes favoring a democratic way of living. The nurse who does not meet groups of children professionally, who is neither teacher nor parent, can also have a share in encouraging democratic standards and ideals, even though she can do nothing more than to give whatever intelligent help she can from the sidelines.

Social Worlds.—One of the first things to bear in mind in furthering this significant social program is that we must meet children where they are. Whatever a child learns about the meaning of democracy he learns in relation to his own social world whether it be wide or extremely narrow. If we had some means of measuring the social worlds of different persons, and by that

we mean the world as each individual knows it, we should find almost unlimited variations. The world of an infant and that of an international diplomat differ immeasurably. The geographical boundaries of the social world of a baby often do not extend beyond the front lawn of his parents' home. Persons who make up his social world are often limited to members of the family, possibly a pediatrician, and occasional visitors. The world of the international diplomat, on the other hand, is almost global in its boundaries. It includes peoples of many races and nationalities. The social problems which enter into his world are as varied and numerous as the personalities entering into it.

The young child's world is, of course, larger than that of the baby, but still extremely limited. It includes his yard, his neighbors' yards, stores, his Sunday school and nursery school, in some instances, and, sometimes, the engine house. It usually includes, also, more remote areas which are visited occasionally while riding in the family automobile. Personalities in the preschool child's social world include his family, the milkman and other delivery men, household workers, neighborhood children and their parents, and perhaps his teachers, the minister, and his Sunday school teacher. As a rule, the geographic and social world of the preschool child does not extend far beyond the neighborhood in which he lives.

For Figure 51, see pages 140-141.

As the child grows older, his social world gradually expands to include more actual territory and more personalities. Through his school experiences, his reading, and his contacts with interested adults, his social horizon is widened. His insight into the interdependence of persons, families, communities, and nations, becomes greater through first hand experiences and whatever type of guidance he may have.

One of the most important facts for the adult guide to keep in mind is that the child's outlook on social problems depends upon the kind of a social world in which he lives. This, as has been suggested, means that we must meet the child on his own ground. It suggests the folly of trying to make a child appreciate a principle of democracy which is entirely beyond his experience. It suggests the absolute unwisdom of preaching to a child about what he ought to do rather than to make it possible for him to learn from actual experiences.

Living Democracy.—Having recognized the necessity for teaching democracy, as it relates to daily life, a next step is to define some of the habits and attitudes which we believe to be conducive to democratic living. First of all, we shall need to encourage children to assume responsibility and to practice governing themselves whenever it is feasible. We shall want to help them to get along comfortably with their companions, to work and play with them, to respect their rights, to learn how to merit the respect of other children

and, above all, to be self-respecting. To guide children in forming habits such as these or, at least, to give every encouragement to those who are trying to guide them, is one of the responsibilities of all public-spirited citizens.

With the right kind of guidance, children can learn to place a high value on friendliness; this is one of the surest antidotes to bitter intolerance which is so prevalent in the world today. Studies of changes in attitudes suggest that pleasant acquaintance with members of an unpopular group makes it easier for us to have a favorable attitude toward the whole group.¹ One member of a group against which there is a common prejudice can, if he wins the respect and admiration of children, help to safeguard them from the formation of nationality and racial bias, as far as his own group is concerned. Knowing and liking little Johnny Mexican, for instance, children more readily become interested in others who are like him; when they enjoy a quaint little girl from abroad it is not easy for them to hate her countrymen at the same time.

Even among American born children of similar social background, there are differences in loyalties, in interests, and in belief far too numerous to mention. In any democratic society it is necessary that each one of us make good adjustments to those who are not just like us,—who do not think as we do in all things. We have often said, and somewhat glibly, that democracy is based upon respect for personality. This means, among other things, that a democratic way of life is not possible unless we not only tolerate, but *value* the contributions of all sorts of persons from all walks in life.

There is, for all children, a near by social world which they have a need and a right to explore, with an adult guide who is ever alert to the possibilities of making them socially sensitive. Children can be helped to discover that no man is self-sufficient,—that each one of us is dependent upon many others for the necessities of everyday life.

Unless the children for whom we provide a democratic manner of life are *happy* in it, we run the risk of defeating the very purpose for which community effort is organized. To be happy, every child must feel that he is useful. He must believe that he is a good member of some group and that he is worthy of membership in it. He must have faith in the integrity of those with whom he is most often associated. He must have faith in himself. To help every child to prove his real worth in a social group is a challenge to each of us and a challenge to our belief in democracy.

There is very little in general psychology which cannot be made to apply to the social problem of nurturing democratic habits and attitudes. All that is known (and more that is to be discovered), about the learning of social attitudes can be applied to the problem. Studies of motivation and of learning

through doing should be immediately valuable. A knowledge of how we learn meanings and social concepts should be particularly pertinent in this connection. Psychology can be put to work actively as an aid in this most significant social undertaking.

PROBLEMS OF DELINQUENCY

The nurse, even at the time of her graduation, is not so far removed from the adolescent as to have forgotten all of the adolescent problems which she herself has solved, perhaps only partially. She should find it easy to understand an adolescent's craving for self-esteem and his desire to be respected. She is in a position to appreciate how readily he is swayed by the standards of different groups and how much he needs an interpreter. The public health nurse, because she has contact with so many families, becomes familiar with some of the difficulties encountered by adolescents in getting along in their homes. She is usually welcomed in the family as a friendly and an authoritative person and, because of this advantage which she enjoys, she has unusual opportunities to serve as a thoughtful and helpful counselor. Nurses who are teaching in public schools become pleasantly acquainted with numerous youths of junior and senior high school age. Many nurses occupy a strategic position, as far as their contacts with young adolescents are concerned. Any social problem which relates particularly to adolescent girls and boys should make an immediate appeal to the nurse.

One of the most pressing social problems of any urban community into which the nurse may go after graduation will, without doubt, be the problem of juvenile delinquency. Progress is being made, but progress is slow; the delinquent is better understood than he has been in years past, but much still remains to be done before any real progress can be made toward stamping out widespread delinquent tendencies.

We usually think of delinquency as a problem of adolescence because so many delinquents are of adolescent age. The beginnings of anti-social behavior are to be found in earlier childhood, however. In a study of delinquent girls and boys, made by Healy and Bronner, pioneers in this country in studying problems of delinquency, it was estimated that, in 48 per cent of cases the first known delinquent act occurred at the age of eight or earlier.² Only 22 per cent engaged for the first time in delinquent activity after the age of twelve.

Delinquents do not constitute a peculiar cross section of human nature. They differ among themselves as do children who have not happened to choose anti-social behavior as a means of self-expression. Even though they do engage in similar activities such as stealing, playing truant, running away from home,

and staying out all night, the reasons why they behave as they do are not common reasons. A child may play truant because he cannot get along well in school, because he hates school, or, perhaps, because he is irked by authority in any form. He may be prompted to steal by a variety of motives. The one most common characteristic, which is shared by 92 per cent of delinquent youths, according to the study just mentioned, is that they are profoundly disturbed emotionally.

Environmental Factors Contributing to Delinquency.—The causes of delinquency are many and exceedingly complex. Environmental factors contribute to anti-social behavior, because it is easier under some circumstances than others for an emotionally disturbed child to find an outlet through delinquent activities. Poverty, broken homes, bad companions, and other conditions have often been considered to be causes of delinquency. As knowledge of the delinquent child himself is advanced, it appears that factors such as have been mentioned are only contributing causes; the root of the difficulty is in the child himself.

Poverty, in and of itself, cannot be said to be a cause of anti-social behavior. By no means all delinquents come from poor families, and by no means all children of poor families are delinquent. A very poor family cannot afford to choose the neighborhood in which its children are to be brought up, and so must live wherever quarters are available at a price which the family can pay. The neighborhoods in which the lowest income families live are characterized by crowded living conditions and many of the social dangers which accompany poverty. In many families there are boarders whose influence is of questionable value to the growing child. The child is often forced to spend his leisure in whatever places his underprivileged neighborhood may provide. Parents who are hard pressed by poverty are often so busy that they have little or no time to give to their children, so their children spend their time on the streets and unsupervised. Unless there is some stable adult upon whom he can depend, a child who is already disturbed can, under such circumstances, slip easily into anti-social behavior.

When the family is broken up and the child is deprived of one or both parents he may, because he is denied the satisfactions of a normal home life, stay away from home as much as possible. As in the case of poverty, however, it appears that it is the stress and strain prevailing in the broken home which contributes to delinquency more than it is the lack of one or both parents. One dependable adult who has established the right kind of relationship with a child can make his life satisfying even in a broken home.

Life in an undesirable neighborhood and the lack of wise adult guidance combine to place the potential delinquent where he is almost sure to have

bad companions. Delinquency is seldom an independent venture. Undesirable companions usually contribute greatly to a youth's anti-social habits and attitudes. They may contribute also to his false ideas of what constitutes personal worth. When all factors contributing to delinquency have been critically examined, it appears that the fundamental lack of a delinquent girl or boy is a chance to feel worthy while behaving in a socially acceptable manner.

Personal Factors Contributing to Delinquency.—It is commonly believed that the delinquent behaves as he does because he is mentally dull. It is true that many feeble-minded children are found among delinquents, but it is not true that all, or even most, delinquents are of very low intelligence. In their ranks we can find youths of exceptionally high intelligence, as well as those who are inferior in this respect. On the whole, however, delinquents tend to be below normal although not feeble-minded. The average IQ in the population at large is between 90 and 110. The average IQ of delinquents, according to a summary of the average intelligence quotients of 17 groups of delinquent girls and boys, falls between 68.9 and 92.³ The average IQ of the lowest group, 68.9, is just under the line which separates the feeble-minded from the dull. The group with the highest average IQ is within the lower ranges of normal. The average IQ of the middle group is 82.

An IQ that is somewhat below normal, like poverty, broken homes, and bad companionship, can contribute to delinquent behavior if, in addition to being a slight misfit in school, the child is tense and disturbed. Some truancy seems to be related to inability to make a success of school work. In the Healy and Bronner study to which we have referred, it was found that about one in three delinquents (34 per cent), did poorly in school. There is, however, nothing to suggest that a child may become delinquent *because* he is rated among the dull normal or the dull.

It is impossible to separate personal factors from other factors contributing to delinquency, but it is safe to say that whatever is most responsible for the delinquent youth's attitudes toward himself and his associates has contributed most to his delinquency. That the delinquent experiences a large amount of frustration cannot be questioned. Many studies of the home experiences of delinquent girls and boys indicate that good or poor social adjustment is determined not so much by what happens to a child as it is by the way he feels about it. When delinquent girls or boys are compared with non-delinquent siblings, a significant difference in attitudes toward parental control is often detected. In one study, the main difference discovered between the two groups was in attitudes of rebellion upon the part of children who were delinquent.⁴ Before the girl or boy had become delinquent a rebellious attitude distinguished him from his sibling who did not become delinquent.

A recent and most significant comparison between delinquents and their non-delinquent siblings is reported by Healy and Bronner in the study to which we have referred several times. When the delinquent is compared with a brother or sister who has not become anti-social, the delinquent has been found to be much more over-active and restless, more inclined than the non-delinquent to have a sense of inferiority, and more ascendant (tending to insubordination, desire to dominate, willful disobedience, etc.). The delinquent much more often than the non-delinquent has a strong dislike of school; this was evidenced in 40 per cent of cases. Differences between children who had become delinquent and those who had not were surprisingly little in certain other respects. Regular attendance at church or Sunday school characterized 46 per cent of the delinquent group and 64 per cent of the non-delinquents. Delinquents had belonged to more clubs than the other group, although continued membership in a club was often not indicated in the case of delinquent children. More delinquents than non-delinquents liked to read, the comparative percentages being 76 and 55.

The attitudes of the delinquent child cannot be separated from the attitudes of the parents toward that particular child. Even though the home and neighborhood and physical provisions for two children in a family are the same, the status of the child who is becoming delinquent is not the same as that of the brother or sister who has a more favorable prospect of social adjustment. The Healy and Bronner study suggests that family relationships are satisfactory in no more than one case in five. Delinquents expressed a love for the father in only one in five cases; about half of them expressed a love for the mother.

More than he needs anything else, the potential delinquent needs to be understood before he becomes delinquent. He is no different from any other youth of his age, as far as his basic motives are concerned. One way to prevent delinquency is to encourage programs of education which stress the importance of treating all children as understandingly as possible. The loyalty of the delinquent to his group is often due to the fact that he finds, in his gang, a sense of fellowship and of common purpose (however ill-chosen it may be), which is lacking elsewhere. Programs which provide group fellowship on an approved level can be made to satisfy many of the needs which are met by the anti-social gang. The faithfulness with which a delinquent sometimes follows a bad leader, suggests that he would like even better to follow a good leader.

No program, however, can get at the basic causes of delinquency without working directly with parents who have it within their power to grant to each child an affectionate, stable, and companionable type of guidance, or, on the

other hand, to deny it to him. Whatever psychology has to contribute to mental hygiene programs and to programs of parent education is directly applicable to an attack upon delinquency.

In selecting from the field of general psychology, those topics which seem to bear particularly upon problems of delinquency, we find it hard to make a choice, because a study of delinquency is first of all a study of human nature. If we were obliged to limit our choice to two or three topics, we would probably do well to learn more about motivation, social learnings and reactions to strain and frustration.

Exaggeration of Problem in Wartime.—Whatever factors encourage delinquency in time of peace are likely to be exaggerated in wartime. As the whole world became disrupted with the launching of World War II, in communities everywhere, delinquency began to increase. With war there is always an increase in the number of broken homes. Fathers go into the armed services, and mothers are left to care for their families without the help of the father. Appeals to patriotism and to a desire to earn, send many mothers into industry. Even though the father may remain at home, the working hours of the two may be so different that the family, as a whole, is never together. One seventh grade girl, whose entire family was working in defense industries, reported that she had not seen her mother for several weeks,—this, despite the fact that all members of the family slept under the same roof.

Poverty, which is a factor contributing to delinquency in normal times, is replaced, in wartime, in some instances, by money that comes too easily. Adolescents, as well as adults, who are paid wages which are far beyond anything that might be expected under any but war conditions, are often totally unprepared to use their sudden "wealth" intelligently.

War necessarily means stress and strain to persons in all walks of life. It is for this reason that many factors which contribute to delinquency in normal times take on exaggerated importance in time of war. Interracial and internationality antagonisms are aggravated by war conditions. It is difficult for a stable adult to face social issues of a world at war fairly and squarely. The adolescent who is still in the experimental stage of social adjustment must find it doubly hard.

The contributions of World War II to the delinquent tendencies of adolescent girls and boys can probably never be fully measured. While delinquency is rooted in factors that are less temporary than war, the emotional tension and social upheaval which accompanies a world at war, has exaggerated the problem of delinquency. With an exaggeration of the problem there has come, perhaps, a more widespread recognition of the fact that delinquency is everybody's problem.

Every community, for many years to come, will feel the impact of World War II upon the emotional and social adjustments of those who have been away and have returned, as well as upon many of those who have remained at home. The nurse will, without doubt, either in her professional or her private life, come in contact with men and women who find their adjustments very difficult. Transition from military service to life in the community cannot be accomplished over night. Social and psychological problems relating to such a transition challenge our best thinking. The adjustment needs of returned veterans have been studied extensively by psychologists and psychiatrists who are close to the problem.⁵

Common Adjustment Problems.—Ex-service men often need help in establishing themselves vocationally. They need sympathetic guidance in ridding themselves of deep-seated hostilities. Some, in returning to work, to their families, or to studies, report that they feel strange and somewhat set apart from their friends and relatives, because they have not had an opportunity to participate in civilian group activities. Some indicate a desire to return to service in order to escape the responsibilities of daily life.

They are sometimes very uncertain about their purposes in life; they have been living in such a way that personal goals are of no immediate significance. They tend to be restless and unable to relax. Many must adjust to physical handicaps, not only vocationally, but emotionally. In their family relationships they are sometimes overwhelmed by the changes that have taken place, changes in attitude and interest as well as in ways of living.

Of course, not all encounter such difficulties in picking up the threads of normal life, but there are many who do. Inability to fit at once into civilian life must not be considered as an evidence of unusual emotional instability. A sound point of view in this respect is of the utmost importance. It is true that some are seriously maladjusted and in need of special group care, but it is not the seriously maladjusted to whom we have referred. Even the man who has been discharged because of emotional instability is not necessarily a person who needs to be regarded as a serious misfit.

War Neuroses.—During World War I and in the years immediately following its close, the *shell-shocked* soldier was the object of much public interest. He was the man who broke down under the strain of combat. He was the one who *couldn't take it*. It was rather generally believed that break-down under the conditions of war was due to basic emotional instability, and that a man who suffered from shell-shock was one who could not endure as much stress or tolerate as much frustration as the average person. World War II has brought about much more insight into the mental break-downs of service personnel.

Among men in the armed services at any time, there are sure to be some whose basic emotional needs have never been satisfactorily met. Even prior to their induction into the services they have not felt secure. Many of these insecure persons have been deprived of a normal amount of affection and companionship. They have had too little opportunity to be approved by their companions and so tend to lack a sense of personal integrity.

Some persons, who already feel insecure, find the strain more than they can endure when they are put into a new situation which necessitates changing many of their routine habits, when they experience an unusual degree of physical fatigue, when they must learn to be killers instead of humanitarians, and when they are subjected to the actual hazards of bombs and shells. Some of these have joined the ranks of the mentally unfit who must be given special attention. In 1940 it was estimated that half of the veterans of World War I who were still hospitalized, under the Veteran's Administration, were psychiatric cases.⁶ In spite of attempts to eliminate seriously maladjusted persons prior to induction into the armed services, it is never possible to screen out all that are unfit for combat duty. Many who were accepted have since been discharged as mentally unfit. In 1944 it was estimated that among every 10 men discharged from the services for all reasons, there were at least 3 who had been discharged as mentally unfit, and that 80 per cent of those who broke down, broke before being assigned to combat.⁷

Combat Fatigue.—Many non-adjustive reactions to combat are due to excessive fatigue. The neurotic is fatigued because he is anxious, but in the case of even the most stable of persons, fatigue tends to aggravate anxiety and emotional stress. In combat duty, men are subjected to extreme physical as well as mental strain, and great fatigue is inevitable. Men who have broken down in combat are not necessarily unstable. They are often men who have pushed themselves far beyond the limits of physical endurance, under conditions which involve a tremendous amount of stress and strain upon the part of everyone concerned.

Men react in different ways to the fatigue of combat.⁸ The least complex reaction appears to be that of simple fatigue, accompanied by some fear and by organic reactions which characterize emotional stress. Some men who have become excessively fatigued and who have experienced aggravated emotional tension over a long period, break only temporarily. Not uncommonly, they are reported to become very irritable, to startle at the slightest provocation, and to give evidence of panic, with extreme organic disturbances. The ailments of such men are often diagnosed *combat fatigue*.

The service man whose break is diagnosed as *combat fatigue* is one who has evidenced no serious maladjustment prior to his break-down in combat.

In a study of many patients suffering from combat fatigue and other emotional disturbances, four factors were repeatedly noted.⁹ In many instances the man entered combat lacking confidence in his leader. Men who broke down were often men who did not know their jobs as well as they should. A third common finding was that the man was thrown into combat in the company of men whom he did not know well and whose conduct under fire he could not predict. A fourth factor of great significance was that the patient went into combat when greatly fatigued.

Suggestions for Helping the Returned Service Man.—Men who are ill-at-ease during the transition from the armed services to civilian life, but who are not unusual in their general adjustment; men who are rather generally unstable and who must be safeguarded from situations that are too exacting; neurotics who are on the borderline between the distinctly abnormal and the emotionally disturbed; and the seriously maladjusted who must be institutionalized,—these are emotional war casualties in whose interests community programs throughout the country are organized.

The problem of reinstatement and rehabilitation of service men is, in its essence, a psychological problem. There is a great body of material available to those who may have an opportunity to study this problem. In the meantime, without waiting to gather more material relating to this social program, some suggestions for immediate action may serve a good purpose.*

Treat him as a whole person and not merely as a man returned from the war.

Help him to live in the present and to plan for the future. There is much in the past which he wants and needs to forget.

Recognize the basic importance of his emotional outlook.

Recognize his need for emotional outlet. Whatever may be the cause of tension, help him to get it out of his system.

Face issues with him. Physical handicaps are not made more tolerable by evasion of the problems involved.

Expect him to help himself. No normal person enjoys complete freedom from responsibility.

Help him to discover worth while purposes.

Problems of vocational counseling are aggravated by total war. Psychologists have gathered a body of material, including tests of various kinds, studies of occupations in which physically handicapped persons can make a success, and studies of factors making for job satisfaction. The war has made many

* An amplification and restatement of suggestions made by Carl R. Rogers in "Psychological Adjustments of Discharged Service Personnel," *Psychol. Bull.*, 1944, 41, 689-696.

social problems more acute, but it has also served to stimulate creative thinking and united effort.

EDUCATION FOR MARRIAGE AND FAMILY LIVING

Another far-reaching social movement in which the nurse will have an opportunity to participate more directly after graduation than she can while in training, relates to every social problem which the community faces. The place to begin to encourage attitudes favoring a better way of living is, of course, in the family. Programs of education for marriage and family living are being sponsored in many communities. They include: programs for men and women who are now parents; educational opportunities for girls and boys in high school and for students in college, planned to help them to define the goals of happy marriage and intelligent parenthood; interpretations of aspects of family living for children in the elementary grades; and nursery school centers where parents and older children may observe young children and learn about their basic needs.

Psychology is making a great contribution to such programs. There are available some significant research findings suggesting what factors are favorable to happy marriage and factors which tend to cause unhappiness.¹⁰ Studies indicate that the happiness or unhappiness of parents influences the later happiness or unhappiness of their children in marriage.¹¹ In studies such as these the nurse will find much material that is immediately helpful to her as a person as well as a professional woman.

Psychology is also contributing studies of child and adolescent development which make programs of education for marriage and family living more meaningful. Some psychological studies about adult-child relationships are of particular significance in programs of community betterment.

MENTAL HYGIENE PROGRAMS

In acquainting herself with aspects of community living in which psychology is making a far-reaching contribution, the nurse will want to know more about mental hygiene programs that are carried on in many communities, through the cooperative activities of various agencies. The aims and purposes of such programs will not be new to her. She will not need to be reminded of the possibilities of applying psychology to the improvement of individual emotional adjustment; through participation in various aspects of the mental hygiene program, she will have a first hand opportunity to appreciate psychology at work.

The implications of the term *mental hygiene* are so many that we cannot go into all the channels through which mental hygienists serve the community. The nurse will participate in many such programs. Her work is such that she cannot do otherwise than serve as an exponent of mental health. She is part of the mental hygiene movement, as are all psychiatrists, psychologists, and others who are concerned about the adjustments of their fellow man.

SUMMARY AND CONCLUSIONS

We have considered some, but by no means all, of the far-reaching social programs in which the nurse, after graduation, will have an opportunity to participate. We have suggested that many social problems are psychological problems.

The necessity for establishing the right kind of person-to-person relationships, beginning in infancy, has been stressed. We cannot expect adults to work together for the common good unless they have been taught to value *togetherness*.

We have discussed some of the basic aims of democratic living and have suggested that everything possible be done to help children to learn the satisfactions of friendliness, respect for others, and of earning the right to be respected; it is apparent that democratic living during adult years is based upon some such guided experiences in childhood.

Challenging and far from solved problems related to delinquency have been considered briefly, with the suggestion that it is in the good emotional adjustment of children before they can become delinquent that problems concerning delinquency are to be solved.

Some social problems aggravated by war have been indicated. In programs of social reconstruction, individual motivation appears to be a problem of first consideration.

We have touched upon programs of education for marriage and family living and have suggested how far-reaching the results of such programs may be in encouraging a better life for all.

Mental hygiene as a movement has been mentioned but not discussed, because mental hygiene and psychology are so closely related in purpose that we cannot consider psychology applied to adjustment without considering mental hygiene.

Finally, one purpose, not previously stated, may now be divulged. We have hoped to encourage an attitude favorable to a continued interest in psychological literature. As one inducement for further reading, a classified bibliography follows this chapter. It has been selected to expand the idea that

psychology is a practical science. Psychology, like any other science, never reaches a final conclusion. As research continues, new lights are thrown upon problems of human adjustment, and new avenues of service are opened up.

SUGGESTED ACTIVITIES

1. Discussion.

(1) Consider certain persons who seem to live at issue with others much of the time. Can you trace a relationship between *issue* experiences and attitudes that are not conducive to peace.

(2) In the light of your own experiences, consider what might have been done to help you to *value* a democratic way of life, as a child.

(3) What common human wants do you believe to be ungratified in the case of many delinquents?

(4) In what professional fields of work does the nurse participate actively in programs planned to help service personnel to adjust to civilian life?

(4) If you were to search through psychological literature pertaining to marriage and family life, what questions would you ask?

(6) In terms of your psychology course, discuss what is meant by *mental hygiene*.

Notebook suggestion. Now that your course is completed jot down in your notebook some of the phases of psychology that you want to know more about. Also make a notation on some phase of community living in which you hope to apply psychology.

A SELECTED LIST OF RECENT PUBLICATIONS OF A PSYCHOLOGICAL NATURE SUGGESTED FOR FUTURE READING

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AUTHOR INDEX

Ackerly, S., 322
Adler, M. J., 322
Aldrich, G. L., 147
Allan, M. E., 302
Allport, Gordon W., 197
Alpert, Augusta, 172
Anderson, J. E., 65, 302
Annis, A. D., 198
Appel, Margaret H., 197
Ayer, Mary E., 259, 269

Baker, H. J., 278
Baruch, Dorothy W., 320
Bayley, Nancy, 302
Bennett, M. E., 26, 147
Bernreuter, Robert C., 259, 269
Berrien, F. K., 121
Blatz, Wm. E., 320
Block, V. L., 180, 198
Blos, Peter, 321
Bowley, Agatha, 320
Bowman, H. A., 321
Boynton, P. L., 15
Braceland, F. J., 322
Breckenridge, M. E., 320
Bronner, Augusta, 310, 313, 322
Buck, N. M., 148
Bugelski, Richard, 198
Burgess, E. W., 322
Burks, B. S., 269

Cannon, W. B., 99
Carlson, A. J., 41
Cattell, P., 303
Challman, Robert C., 245
Chase, L., 148
Clarke, Eric K., 321
Clarke, Willis W., 285, 286

Cole, Luella W., 321
Cottrell, Leonard, 322
Cowdry, E. V., 41
Crissey, O. L., 66
Cruze, Wendell, 49, 322
Cunningham, B. V., 155, 157, 179, 197,
252, 257, 277
Curti, Margaret, 200

Darley, J. G., 289
Dashiell, John F., 99, 301
Davidoff, E., 40, 41
Davis, Allison, 197
Deland, Margaret, 171
Dewey, John, 163, 172
Dockeray, Floyd C., 172, 219, 245, 301
Doll, Edgar A., 66
Douglas, L. C., 99
Dunlap, Knight, 148
Durant, Will, 121
Dysinger, W. S., 219

Escalona, S. K., 198
Eysenck, H. J., 117, 121

Fenton, Norman, 321
Flemming, C. W., 147, 303
Forlando, G., 148
Foster, Robert G., 321
Frank, Lawrence K., 65
Freeman, F. N., 66
Freestone, N. W., 99

Galen, 4
Gates, A. I., 245
Gelhorn, Ernest, 87

Gesell, Arnold, 280, 302, 320
 Gestalt, 159
 Goldfarb, W., 269
 Goodenough, Florence, 302
 Goodstone, G. L., 40, 41
 Glass, H. B., 65, 66
 Groves, Ernest, 322

Hallowell, D. K., 302
 Ham, A. W., 26, 147
 Handy, L. M., 66
 Harris, H. I., 99
 Hartman, George W., 268
 Hartshorne, H., 198
 Hathaway, S. R., 93, 98, 99, 303
 Haverkamp, H. J., 148
 Healy, William, 310, 313, 322
 Henry, George W., 12, 246
 Hollingworth, L. S., 42
 Holodnak, H. B., 121
 Holzinger, K. J., 66
 Honzik, M. P., 302
 Hubbard, Ruth, 40
 Hull, Clark L., 103, 200
 Hunt, Thelma, 289
 Hunt, W. A., 99
 Hunter, E. C., 175, 198, 291, 301, 303
 Hurlock, Elizabeth, 121
 Husband, R., 27, 65, 198, 246, 268

Ilg, Frances L., 320
 Irwin, O. C., 302

Jackson, Edith, 40
 Jennings, H. S., 65, 66
 Jersild, Arthur T., 198, 200, 209, 245
 Jersild, Catherine L., 200, 209
 Johnson, Roswell H., 287
 Jones, Harold E., 201, 219
 Jones, Mary C., 200
 Jung, C. G., 269

Katz, Evelyn, 302
 Kent, G. H., 41

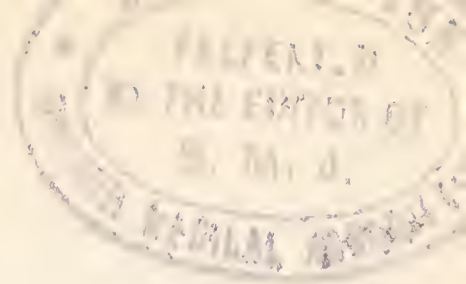
Klein, David B., 321
 Knight, F. B., 148
 Knott, J. R., 99
 Kolb, L. C., 322
 Kopp, H., 99
 Kretschmer, E., 261, 269
 Kuder, Frederick, 284
 Kuntz, Albert, 88

Laird, D. A., 321
 Laird, E. C., 321
 Langer, Walter C., 121
 Lanier, L. H., 99
 Lashley, K. S., 93
 Lawton, G., 40, 41
 Leiter, Russell G., 274, 275
 Lentz, Theodore F., 291, 301
 Lesser, E. K., 321
 Lester, Olive, 198
 Leuba, Clarence, 267, 268
 Lewin, K., 198
 Lincoln, Edward A., 302
 Lindsley, Donald B., 99
 Lippitt, R., 198
 Lux, Charles A., 140-141

McConnell, T. R., 148, 245
 McCutcheon, John T., 140-141
 McFarland, Ross A., 294, 302, 303
 McHugh, G., 302
 McKay, Henry D., 321
 McKinley, J. C., 303
 Markey, Frances V., 198, 200, 209
 Marquis, D. P., 219
 Maller, J. B., 121
 Maslow, A. H., 121
 Maurer, K. M., 302
 May, Mark, 198, 322
 Meier, N. C., 198
 Mellenbruch, P. L., 283
 Meltzer, H., 246
 Miller, D. C., 80
 Miller, F. L., 219
 Miller, L. R., 303
 Miller, Olive Beaupre, 151
 Mittelman, B., 246

- Morgan, C. M., 33, 41
Morgan, Clifford T., 12, 98, 99, 121, 172, 219
Morgan, J. J. B., 172
Moss, F. A., 289
Murphy, Gardner, 172
Murphy, Lois B., 198
Murray, H. A., 197, 303
Muse, Maude B., 147, 268
- Nagge, Joseph W., 121, 172, 268
Newman, H. H., 66
Neyman, C. A., 269
- Ojemann, R. H., 148
Omwake, Katharine T., 289
- Panlasigui, I., 148
Pavlov, I. P., 5, 200, 202, 220
Penrose, L. S., 65, 66
Peterson, Ruth, 198
Pillsbury, W. B., 198
Pintner, R., 155, 157, 277, 302
Plesset, I. R., 66
Poffenberger, A. T., 246
Potts, Edith Margaret, 303
Pratt, C. K., 322
- Raines, G. N., 322
Ralya, L. L., 12
Reifenstein, E. C., 40, 41
Remmers, H. H., 148
Renshaw, S., 219
Reynolds, Martha M., 198
Roberts, Katherine E., 302
Rogers, Carl R., 322
Rome, H. H., 322
Rorschach, H., 303
Rosanoff, A. J., 41, 66
Ruchmich, C. A., 219
- Salter, M. D., 26, 147
Scharf, M. P., 246
- Scheidemann, N. V., 66
Scheinfeld, Amram, 47, 65
Seagoe, M. V., 148
Seitz, Clifford P., 294, 302, 303
Shaffer, Laurance F., 302
Shakespeare, William, 260
Shaw, Clifford R., 321
Sheldon, W. H., 261, 269
Sherman, Mandel, 175, 198
Shirley, M. M., 40
Shrodes, C., 27, 65, 198, 246, 268
Shuttleworth, F. K., 198
Sims, V. M., 121
Skodak, Marie, 66
Slight, David, 322
Smith, F. T., 322
Solomon, J. C., 40
Solomon, P., 99
Stanger, M., 303
Starkweather, E. K., 302
Street, R. F., 159
Stroud, J. B., 148
Stoddard, George, 66
Stott, Leland H., 288
- Taylor, K. Van F., 16
Teagarden, Florence, 321
Terman, L. M., 322
Thompson, C. E., 222
Thorndike, E. L., 116, 121, 148, 198
Thorndike, Robert, 303
Thornton, G. R., 269
Thorpe, Louis P., 285, 286
Thurston, L. O., 198
Tiegs, Ernest W., 285, 286, 302, 321
Tjossem, T. J., 99
Towsley, Lena G., 140-141
Tyler, Harry E., 27
- Valentine, Willard L., 12, 65, 99, 121, 172, 219, 302
VanGundy, Justine, 27, 65, 198, 246, 268
Vincent, E. Lee, 320
Vollmer, E. P., 98

- | | |
|--------------------------------|---------------------------|
| Waller, W. W., 322 | Wolff, H. G., 246 |
| Ward, C. H., 131 | Woodruff, A. D., 114, 121 |
| Warden, C. J., 121 | Woodworth, R. S., 66 |
| Washburne, Ruth W., 321 | Woolwine, R. D., 15 |
| Watson, Goodwin, 170 | Wrenn, C. Gilbert, 147 |
| Watson, John B., 200, 208, 211 | |
| Wechter, Dixon, 322 | |
| Wellman, Beth, 302 | Yacorzynski, C. K., 269 |
| Weil, A. R., 198 | Young, F. M., 302 |
| Weill, Blanche, 321 | Young, Paul T., 219 |
| White, Wendell, 321 | |
| Williamson, E. G., 289 | |
| Wittson, C. L., 99 | Zachry, 219, 321 |
| Wolf, S., 246 | Zilboorg, 12, 246 |



SUBJECT INDEX

- Academic background, 21
Acromegaly, 72
Adrenalin, 74, 75, 89
Adult-child relationships, 305-307
Adjustment mechanisms, 225-232
 defensive reactions, 226, 227
 discussion problems, 245
Aged, care of, 32-35
 bed-side manner, 32
 changes in memory, 34
 changes in perception, 34
 contributions of, 34, 35
 health and happiness, 32
 useful, 33, 34
Aggression, 185
Ailment adjustments, 233-236
Altruism, 183
Ambivert, 263
Amnesia, 162
Anatomy, 141
Anger, 211-213
 and frustration, 211
 and restraint, 211
 guidance of (adult), 213
 guidance of (children), 212
 nurse guidance of, 212, 213
 stimulus to, 211
Anxieties, 207-211, 236
 nurse guidance of, 208-211
Anxiety neurosis, 236
 persistent, 239
Aphasia, 163
Arguments, errors in, test, 171
Army Group Tests, 274, 275, 276
Attention, 160-162
 disorders of, 162
 student nurse, 161
Attitudes, changes in, 174-176, 190
 democratic living and, 192
 influence of church, 191
Attitudes, *continued*
 influence of leisure reading, 190
 influence of motion pictures, 190
 influence of radio, 190
 influence of school, 191
 influence of youth organizations, 191
 learned in family, 177-181
 nature of, 174
 personal factors influencing, 193
 ready made, 176, 177
Autonomic nervous system, 86-90
 divisions of, 87-89
 emergency mechanism, 89
 sympathetic division, 89

Bacteriology, 141
Behavior, complex, 68
 defined, 67
 not fragmentary, 69
 not haphazard, 69
 theories of, 100, 101
Beliefs, popular, 5, 6
 test of, 121, 200
 answers, 200
Bell Adjustment Inventory, 303
Belongingness, test of, 277
Bernreuter Personality Inventory, 303
Binet-Simon, test and revisions, 272
Black vs. white distribution, 238
 scheme of thinking, 42, 44
Bodily activity, increase of, 91
Brain, 84
 cerebellum, 86
 cerebral hemispheres, 84
 cortex, 84
Brain stem, 86
 medulla, 86
 midbrain, 86
 pores, 86

- Brain waves, 94-96
 - alpha wave, 94, 95
 - and activity of subject, 95
 - and emotional reactions, 94, 95
 - and pathological conditions, 95
 - beta wave, 94, 95
- Broad-mindedness, 186
- C. R. Opinionaire (Lentz), 291
- The California Test of Personality (Tiegs, Clarke and Thorpe) Adult, 285
 - Primary, 286
- Capitalization, discussion problem, 245
- Character, discussion problem, 267
- Characteristics of nurse, 23, 24
- Chemistry, 141
- Children, psychological care of, 30, 32
- Chromosomes, 46, 47
- Cinderella, child's version of, 150
- Circumstantiality, 162
- Color, spectrum, 81
- Color-blindness, 81
- Combat fatigue, 316, 317
 - factors commonly noted, 317
- Competition, 107, 108
- Compulsion, 239
- Concentration, in learning, 128, 129
- Conditioned reflex, 202
- Conditioned responses, to nurse, 204
 - spread to related situations, 203, 204
 - unlearning, 205-207
- Conditioning, direct, 207
 - emotional, 202-207
 - laboratory studies of, 202, 203
 - physiological basis, 202
- Conquering hero mechanism, 238, 239
- Conservatism, 175, 176
 - radicalism, 290-293
 - radicalism, test of, 290-293
- Corti, organ of, 78, 79
- Cretinism, 54, 74
- Curriculum for nurses, purposes in, 142
- Daydreaming, 230-232
 - conquering hero, 230, 231
 - suffering hero, 231
- Defects, inheritance of, 49, 52
- Defensive reactions, capitalization, 227
 - compensation, 226
 - egocentrism, 226
 - projection, 226, 227
- Delinquency, 223
 - attitudes in, 312-314
 - and bad companions, 312
 - and broken home, 311
 - and intelligence, 312
 - and poverty, 311
 - environmental factors contributing to, 311, 312
 - exaggerated in wartime, 314
 - personal factors contributing to, 312-314
 - problems of, 310-314
 - prevention of, 314
- Delinquents, common characteristic, 311
 - and non-delinquents compared, 312, 313
 - wants ungratified, discussion problem, 320
- Delusions, 164
 - of grandeur, 230, 231, 239
 - of persecution, 239
- Dementia praecox (see schizophrenia), 240
- Democracy, fostering aims of, 307-310
 - living, 308-310
- Discipline of group, 183, 184
- Discrimination, 155
- Distribution of traits, 42, 44
- Disuse, 206
- Dominance, cerebral (hemispheric), 93, 94
- Drive, hunger, 102
 - measures of, 101, 102, 103
 - physiological, 101, 102
 - sex, 111
 - thirst, 102
- Economic adjustments, 223, 224
- Electroencephalogram, 94, 95
- Emotion, organic basis of, 199-202
 - organic changes in, 200-202
- Emotional adjustment, testing, 293, 294

- Emotional behavior, difference between children and adults, 214
- Emotional conditioning, factors in, 204, 205
- Emotional expressions, common, 207-213
- Emotional learnings, 199-220
summary of, 215-218
- Emotional problems, in illness, 214
- Emotional reactions, of a cat, 200
- Emotional responses, of adolescents discussion problem, 219
conditioning of, 203
implicit and overt, 200
persistence of, 201, 202
to motion pictures, 201, 202
undifferentiated in infancy, 208
- Emotionality, factors in, 214, 215
and heredity, 214, 215
and individual differences in temperament, 214
general, 213, 214
- Environment, belief, 53
cultural, 52, 53
custom, 53
geographical, 52
interpersonal, 53
nature of, 52, 53
physical, 52
plan for studying, 64
prenatal, 53, 54
social, 52, 53
tradition, 53
- Esthetic differences, 155
- Everyday Life (see Stott, Leland)
- Experimentation, social, 182-185
- Exteroceptors, 76
- Extroversion-introversion, in psychosis, 263
- Extrovertive tendencies, 262, 263
- Fabrications, 155
- Family adjustments, adolescents, 178, 180
- Fatigue neurosis (see neurasthenia)
- Fear, and unreadiness, 208
of being alone, 208
of bodily injury, 208
- Fear, *continued*
of mysterious, 208
- Fears, 207-211
conditioned in hospital, discussion problem, 218
nurse and adult patients, 210, 211
nurse and children, 209, 210
nurse guidance of, 208-211
nurse and patients, discussion problem, 218
of children reported, 209
- Feeble-minded mothers, 59, 60
- Feeble-mindedness, inheritance of, 51, 52
and syphilis, 53, 54
levels of, 50, 51
nature of, 50
non-germinal, 51, 52
- Flight of ideas, 162
- Foster home studies, 59, 60
- Frustrating situations, alternative in adjusting to, 226
- Frustration, 109, 222, 226
and conflict of motives, 245
discussion problem, 223
environmental obstacles, 223
in economic adjustments, 245
nature of, 313
physical handicaps, 245
prejudice, 245
restrictions and taboos, 224, 245
- Galvanometer, 200
- Generalizing, 157, 158
- Genes, 46
- Germ cells, 46, 48
- Gestalt psychology, 156
- Glands, duct, 71
- Glands, endocrine, 71-76
adrenal, 74, 75, 89
liver, 75
pancreas, 75
parathyroid, 74
pineal body, 75
pituitary, 72
thymus, 75
thyroid, 72

- Glands, endocrine, location of, 73
 Glycosuria, 75
 Goiter, 74
 Group tests, later, 276-279
 Guidance, democratic, 196
 nurse guidance of tension, 225
 positive and negative, 119
 The Guilford-Martin Personnel Inventory, 303
- Habits, student nurse, 17-21, 25, 26
 child-in-the-home, 17, 18
 emotional, 19
 social, 18, 19
 study habits and attitudes, 19-21
 subject-matter preferences, 19
 Heights of ten-year-old boys, 43, 44
 Heredity and environment, an analogy,
 55, 56
 and personality, 61, 62
 aptitudes, 61
 interaction of, 55-62
 mental growth, 56-61
 practical problems, 57
 summary, 62, 63
 Hidden blocks test, 277
 Hippocrates, theories of, 3, 4, 260
 History of nursing, 142
 Home front, meaning of, 304
 Human behavior, curiosity about, 3, 4
 Human organism, summary, 96, 97
 Human traits, recognized by ancient
 man, 1, 2
 Hypochondria, 235, 236
 Hypoglycemia, 75
 Hypothalamus, 85, 86, 89, 90
 Hypothyroidism, 74
 Hysteria, 233-235
 development of, 234
- Identical twins, studies of, 51, 52, 58, 59,
 259, 260
 Idiot, 51
 Illusions, 160
 of memory, 163
 Imbecile, 50
- Impulsions, 236
 Individual differences, 42-64
 plan for observing, 64
 Inferiority, attitudes of, 164
 Inheritance, laboratory studies of, 45
 and mental defect, 49-52
 nature of, 45-52
 theories, 45
 Insanity, causes of, 240
 and organic disorders, 240
 diagnosis of, 240
 exciting causes of, 240
 forms of, 240, 241
 learning to be insane, 238-240
 predisposing factors, 240
 prevention of, 239
 Insight, 156, 157, 158-160
 experimental study of, 156, 157
 illustrations of, 157
 Instincts, 100, 101
 criteria of, 100
 Institutional life and personality, 60,
 258, 259
 Institutions and agencies distributing
 child care pamphlets, list of, 40, 41
 Insulin, 75
 Integration, 232
 Intelligence, family resemblance in, 58
 meaning of, 270
 practical questions concerning, 60, 61
 performance tests, 273
 tests of, 270-282
 Intelligence Quotient, 50, 51
 in relation to age, 280
 meaning of, 279
 stability of, 280, 281
 variation among kindergarten and first
 grade children, 280
 variation among older children, 280
 variation and nursery school, 280
 Intelligence tests, 155
 individual tests, 272
 nature of, 271-273
 of babies and young children, 280
 selection of items, 278
 uses of, 281, 282
 what they measure, 271-275
 Intelligent behavior, 270, 271

- Interests, vocational, 15-17
- Interoceptors, 83
- Inter-relationships and meaningful learning, 143
- Introversion-extroversion, in psychosis, 263
- Introvertive tendencies, 262, 263
- Irritability, 211-213
 - guidance of (adult), 213
 - nurse guidance of, 212, 213
- Issues, adolescents with mothers, 180
 - adult-made, 177, 178
 - child-made, 182, 183
- Issue experiences, discussion problem, 320
- Issue relationships, 305-307

- Jealousy, 119, 213
- Johnson Temperament Analysis, 287
- Joy in being a cause, evidence of, 105

- Knowledge, organization for use, 23
 - of results, in learning, 129, 130
- Kuder Preference Record, 284

- Labels vs. explanation, 7
- Leadership, 185, 192
 - autocratic, 192
 - cues to, 185, 186
 - democratic, 192
 - laissez faire, 192
 - student nurse, 196
- Learning, discovering principles, 133, 134
 - goal-directed, 128-131, 135, 136, 140, 141
 - meaningful, 131-134, 141
 - means and relationships, 130, 131
 - measures of, 135, 136
 - negative practice, 135
 - organizing, 133
 - plateaus, 137, 138
 - purpose in, 128, 129
 - role of practice in, 135
 - self-active, 123-128, 134, 135, 138-140
- Learning, *continued*
 - total situation in, 136
 - use of model, 134, 135
 - whole vs. part, 131, 132
- Learning curves, 137, 138
 - initial learning, 137
- Learning problems, student nurse, 18, 21-23, 134
- Leisure reading, 196
- Levels of aspiration, 140, 188
- Liberalism, 175, 176
- Life, beginnings of, 45-47
- Light waves, amplitude, 81
 - frequency, 81
 - saturation, 81
- Likeness and difference, recognition of, 151-154
- Localization, of brain functions, 92, 93
- Logic-tight compartments, 231, 232
- Loyalties, group, 186-188

- Maladjustments, failure to recognize, 222
 - serious, 238-240
- Manic depressive psychoses, 240
- Mannerisms, nervous, 223
- Marriage and family life, discussion problem, 320
 - education for, 318
- Maze test, 276
- Meaning, subjects stressing, 142
 - through experience, 149-151
- Mechanical aptitude, 283
 - and ability, 282, 283
- Mellenbruch Mechanical Aptitude Test, 283
- Memorization, nursing arts terminology, 21-23, 138, 141
 - subjects necessitating, 138-141
- Memory, errors in, 162, 163
- Mental age, meaning of, 279
 - and IQ, 279, 280
- Mental growth, hereditary ceilings, 56, 57
- Mental hygiene, discussion problem, 320
 - programs, 318
- Minnesota Inventory of Social Behavior (Williamson and Darley), 289

- Mongolism, 54
 Moral codes, 181
 Moral knowledge, 181
 Moron, 50
 Motion pictures, age differences in re-
 sponse to, 201
 discussion problem, 196
 emotional response to, 201, 202
 Motivation, 100-121
 choice of nursing profession, 14-17
 levels of, 120
 Maslow's theory, 120
 related to tension, 110
 self, 123
 theory of, 110
 Motives, aversions, 117
 compared as to strength, 114-117
 conflict of, 108, 109, 224, 225
 conflict of patients, 225
 development of, 104-108
 differences in age groups, 114, 115
 experimental studies of, 105, 119
 in babyhood, 104-106
 personal worth, 19
 satisfactions, 117
 student nurse, 108
 suggested by expenditures, 116
 three wishes method, 119
 thwarting of, 109
 Motor learnings, in bed-making, 134-
 136
 of student nurse, 23, 134-138
 Motor performance tests, 284
 Motor response, controlled, 91
- Need, nature of, 110
 Needs, classification of, 110, 111
 common human, 109-113
 for activity, 110
 for approval, love and affection, 112
 to belong, 112, 113
 for personal integrity, 113
 for security, 111, 112
 for self-actualization, 113
 for self-evaluation, 113
 in hospital, 113
 Negativism, 177, 178
- Nervous system (see autonomic nervous
 system)
 basic functions, 86
 central, 83-86
 reactions as a whole, 90-92
 research, 92-96
 Neural impulse, 90
 Neurasthenia, 235
 Neurologists, studies of, 5
 Neuron, 90
 Neurotic, adjustments, 231-237
 ailments of, 233-236
 tendencies, tests of, 294
 Night-blindness, 81, 82
 Normal and abnormal, difference be-
 tween, 229, 230, 238, 239, 240
 Normal distribution, dynamic illustra-
 tion, 42, 43
 Note-taking, 132
 Nurse, conditioned responses to, 204
 and returned service personnel, dis-
 cussion of, 320
 home front problems, 304, 305
 on home front, 304-322
 on home front—summary, 319, 320
 patient relationships, 119, 210, 213
 time schedule of, 124
- Obsessions, 236, 239
 Omissions test, 278
 Opinion, influence of press, 189
 versus fact, 8, 9
 Osmosis, 48
 Overlearning, 139, 140
 student study of, 146
- Pancreas, 75
 Parents' Magazine, 140, 141
 Patients, care of, summary, 38
 and student nurse, 38
 summary, 38
 common needs, 37, 38
 deaf, care of, 36
 differences among, 29, 30, 35, 36
 hospitalized, 28-38
 intelligent behavior, discussion prob-
 lem, 300

Patients, *continued*

- neurotic, 36, 245
 - nurse guidance of, 245
 - personality, 39, 40
 - studies of, 39, 40
 - variations in readiness to learn, 56
- Peer relationships, 181-188
- Perception, 158-160
- errors in, 160
- Personal relationships, establishing
- wholesome, 305-307
- Personal worth motives, 105, 106, 107, 230
- interaction with social, 107, 108
- Personality, 247-269
- and body build, 261
 - and heredity, 251, 252
 - a plan for studying, 267
 - as attitudes, 251
 - as interaction, 249, 251
 - as social stimulus, 250, 252
 - discussion problem, 268
 - experimental studies of, 250
 - at age of one year, 252, 255
 - changing, 23, 25, 26, 264
 - differences in, 252, 255
 - discipline, 258
 - family experiences influencing, 251-260
 - goals of student nurse, discussion problem, 268
 - guidance, discussion problem, 267
 - identical twins, 259, 260
 - intellectual capacities in, 250
 - measuring aspects of, 270-303
 - measurement, summary of, 297, 300
 - middle child, 256
 - nature of, 247, 270
 - nurse's respect for, discussion problem, 267
 - oldest child, 255
 - only child, 255
 - outline for studying, 39
 - position in family, 255, 257
 - self-analysis, 268
 - social behavior, 251
 - student nurse, 17, 21, a plan for self-rating, 301
 - student nurse, changes in, 264
 - summary, 265, 267

Personality, *continued*

- temperament, 250, 251
 - youngest child, 256
- Personality traits, distribution of, 263
- testing, 287, 288
- Personality types, 3, 260-263
- discussion of, 267
 - endocrine therapy, 261
 - in insanity, 261
 - unevenness in development, 247
 - uniqueness, 19
- Perspective, limitations, 8
- social, 187, 188
- Phobias, 236, 239
- Physiological factors, discussion problem of, 218
- interaction with psychological, 200-202
- Physiological limit, 137, 138
- Physiologists, studies of, 4, 5
- Physiology, 141
- Pineal body, 75
- Pintner Paterson Performance Scale, 302
- Pituitary, 72
- Plateaus in learning, 146
- Poverty and frustration, 223
- Predicament procedure, in guidance, 212
- Preferences, 19-21
- Prejudices, 7, 186, 187, 309
- discussion problem, 197
 - evaluation of, 196, 197
 - study of, 196, 197
- Prenatal influences, 45, 48
- Principles of behavior, 69, 70, 83, 91, 92
- experiment study, 97, 98
- Problem solving, 156-157
- Progressive-part, method, 141
- Propaganda, 189, 190
- Proprioceptors, 82, 83
- Psychasthenia, 236, 239
- Psychological and physical factors, interaction of, 200-202, 218, 233, 236-238
- Psychology, applied to personal relationship, 307
- and ancient man, 1, 2
 - and biological sciences, 4, 5
 - beginnings, 1
 - content of course, 39
 - defined, 1

- Psychology, *continued*
 in democratic living, 309, 310
 in folk literature, 1, 2
 problems of delinquency, 314
 problems of marriage and family living, 318
 subject matter, 1
 Psychoneuroses, 232-237
 Psychoses (insanity), 238-240
 Psychosomatic Inventory (McFarland and Seitz), 294
 Psychosomatic relationships, 236-238
 research studies of, 237
 Public health nurse, 310
- Radio, influence, discussion problem, 196
 Rationalization, sour grapes mechanism, 230
 sweet-lemon mechanism, 230
 Reactions to difficulty, 252
 Reading, fixations, 127
 and re-reading, 138
 speed and comprehension, 127
 speed, experimental study of, 146, 147
 speed, student investigation of, 146
 speed, variations in, 126
 Reasoning, 163, 164
 cause and effect, 7, 8
 errors in, 164
 steps in, 163
 Receptor mechanisms (receiving), 76
 Receptor (sense-organ), defined, 76
 Receptors, auditory, 78-80
 equilibrium, 82, 83
 gustatory, 77, 78
 kinesthetic, 82
 olfactory, 78
 skin, 76, 77
 visual, 80-82
 Recessive traits, 48, 49
 Recitation, and recall, 139
 Reference, ideas of, 164
 Reflex reaction, 90
 Relationships, parent-child, 177-181
 parent-child by-products, 181
 recognition of, 165
- Repression, 232
 Response, emotional, 68, 91
 intellectual, 68, 91
 mechanisms, 70-76
 motor, 67, 68
 varieties of, 67-69
 Responsibility, adult-child, 179
 Retina, 80
 Rods and cones (see visual receptors)
 Rumor, experimental study of, 196
- Scapegoating, 187, 224
 Schizophrenia (dementia praecox), 240
 Scholastic Aptitude Test, student nurse, 278
 School of hard knocks, 184
 Science, methods of, 8-10
 rooted in human curiosity, 3, 4
 versus opinion, 6-8
 Scientific method, activities illustrating, 10-12
 need for, 5-8
 summary, 9, 10
 testing hypotheses, 9
 variables, illustrations of, 9
 Security, child patients, 30, 31
 in human relations, 112
 Self-adjustment, testing, 285, 286
 Self-deception, rationalization, 229, 230
 Self-esteem, 1, 2, 230
 Service personnel, transition to civilian life, 315, 317
 Show-off, discussion problem, 245
 Shut-in, 222, 238
 Shyness, 228
 discussion problem, 245
 Social adjustments, student nurse, 173, 174
 testing, 289-293
 Social attitudes, 174-176
 economic problems, 187
 nature of, 174
 tests of, 290-293
 Social behavior, tests of, 289
 Social concepts, study of, 184
 Social experimentation (by-products), 185, 186

- Social habits, 174-176
 inheritance, 176
 Social imitation, 206, 207
 Social Intelligence Test (Moss, Hunt, and Omwake), 289
 Social intelligence, tests of, 289, 290
 Social learnings, 173-198
 student nurse, 173
 summary, 193-195
 Social motives, 106, 107
 integration, 108
 interaction with personal worth, 107, 108
 Social pressures, 189, 190
 Social standards, 174-176
 Social worlds, variations in, 307, 308
 Sound waves, intensity, 79
 overtones, 80
 pitch, 79
 timbre, 79
 Special aptitudes and interests, testing, 282-285
 Spinal cord, 86
 Standards, conflicting, 196
 group, 187
 Stimulus words to common responses, list, 41
 Strain and frustration, reactions to, 221-246
 summary, 241-244
 Stress and strain, causes of, 223-225
 nature of, 221-223
 physical handicap, 224
 prejudices, 224
 Student nurse, adjustment tests, 296
 comparison of two, 297
 democratic living, discussion problem, 320
 intelligent behavior, discussion problem, 300
 measures of motor skill, discussion problem, 300
 scholastic aptitude, 295
 self-test, 143
 social intelligence, discussion problem, 300
 special abilities, discussion problem, 300
 Student nurse, *continued*
 subject-matter tests, 295, 296
 tests for, 294-296
 traits needed, 288
 Study, analysis of methods, 130, 131
 methods, summary of, 143-145
 misfit habits, 21
 periods, spacing of, 147
 principles, 146
 problems of student nurses, 122-148
 sequence of subjects, 140, 141
 time, distribution of, 123-125, 140
 Submission, 185, 196
 Suffering here, 239
 Sympathetic activity, bodily changes, 89
 Synapse, 90
- Temper, and audience, discussion problem, 219
 tantrum, 211, 212
 Temperament, 61
 meaning of, 286
 testing, 286, 287
 theory of body humors, 3
 Tension, 199-202, 213, 214, 221, 222, 224, 232, 235, 236, 262
 and activity, 102, 103
 as drive, 101-104
 bodily, 87
 evidences of, 222, 223
 nurse provision for patients, tension release, 218, 219
 patient, 232
 restlessness, 102-104
 Terminology, 21-23
 Test of Social Attitudes (Hunter), 291, 292
 Thalamus, 85, 89
 Themic Apperception Test (Murray), 303
 Thinking and reasoning, 149-172
 Thinking, characteristics of, in childhood, 149-158
 children's drawings, 152-154
 conclusions based upon characteristics of thought, 166, 167
 conclusions from children's thinking, 165, 166

Thinking, *continued*

- confusion, real and fancied, 154, 155
 - initiative in, 164, 165
 - learning to think, 164-167
 - problems for discussion, 169, 170
 - substitutes for, 163, 164
 - suggestions for student nurse, 169
 - student experiments, 170
 - summary, 168, 169
- Thought (see Thinking)
- Thurstone Neurotic Inventory, 303
- Thymus, 75, 76
- Thyroid gland, 72-74
- Thyroid-hypersecretion, 72, 74
- hypothyroidism, 74
- Thyroxin, 72, 74
- Total situation, 70
- Traits, hereditary, 48
- recessive, 48, 49

Understanding and appreciation, student
nurse goals, 142

Unity of purpose, as a goal, 307

University of Chicago Round Table, 322

Unstable personality, guidance of, dis-
cussion problem, 245

Values, adult, 114-117

Verbal appeal, 206

Vocational counseling, 281

Vocational interests, tests of, 284, 285

Vocations, seven most popular, 15

War, attitudes toward, 175

- neuroses, 315, 316

Wartime problems, 315-318

Well-being, sense of, 104

Whole, part and progressive-part learn-
ing, 141

Withdrawing behavior, 227, 228

- identification, 228, 229

- regression, 228

- seclusiveness and timidity, 227

Worries, 207-221

- nurse guidance of, 208-211





